TERMINAL EVALUATION

Micronesia Public Sector Buildings Energy Efficiency (MPSBEE) Project

Federated States of Micronesia (FSM)

UNDP –GEF Project (PIMS 5997)
GEF ID NUMBER: 9863

October 18, 2023

Terminal Evaluation Report

(December 14, 2020, through August 31, 2023)

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Acknowledgements

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For any shortcomings or errors found within this terminal evaluation report, I take full responsibility.

Thank you all.

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Disclaimer

The findings, interpretations, and conclusions expressed in this Terminal Evaluation Report are of the evaluator, hence do not necessarily reflect the official views of donor agency viz. GEF, technical agency viz. UNDP and DoR&D and other implementing partners. For more information, please contact at Dr. Dhruba Gautam, International Evaluator at drrgautam@gmail.com.

Acronyms

AC	Air conditioner
ADB	Asian Development Bank
AWP	Annual work plan
BEAS	Building Energy Audit System
BEE	Building energy efficient
CO_2	Carbon dioxide
CSO	Civil society organization
CTA	Chief Technical Advisor
DoE	Division of Energy
DoR&D	Department of Resources and Development
EC&EE	Energy conservation and energy efficient
EE	Energy efficient
EMRS	Energy Monitoring and Reporting System
EPA	Environmental Protection Agency
ESIA	Environmental and social impact assessment
ESM	Energy saving measure
FSM	Federated States of Micronesia
EU	European Union
GAP	Gender action plan
GEF	Global Environment Facility
GESI	Gender equality and social inclusion
GHG	Greenhouse gas
GoFSM	Government of FSM
HACT	Harmonized approach to cash transfer
HRM	Human resource management
IP	Implementation partner
JICA	Japan International Cooperation Agency
KII	Key informant interview
LED	Light-emitting diodes
LoA	Letters of agreement
M&E	Monitoring and evaluation
MCO	Multi Country Office
MIS	Management information system
MoU	Memoranda of understanding
MPSBEE	Micronesia Public Sector Buildings Energy Efficiency
MTR	Mid-term review
NDC	Nationally determined contributions
NIM	National implementation modality
O&M	Operation and maintenance
PAB	Project Advisory Board
PEA	Preliminary energy audit
PIF	Project identification form
PIR	Project implementation report
PMU	Project Management Unit
PPP	Public-private partnership
ProDoc	Project document
PwD	Persons with disabilities
RTA	Regional Technical Advisor
SES	Social and Environmental Screening
SESP	Social and Environmental Screening Process
SFDRR	Sendai Framework for Disaster Risk Reduction
SPC	Secretariat of Pacific Community
TE	Terminal evaluation
ToC	Theory of change
ToR	Terms of reference
UNSDCF	United Nation Sustainable Development Cooperation Framework
WB	World Bank

1. Executive Summary

This report summarizes the findings of the terminal evaluation (TE) of the project entitled "Micronesia Public Sector Buildings Energy Efficiency (MPSBEE)", hereinafter referred to as "the project," conducted between July 2023 and September 2023. The report summarizes the key findings, conclusions, recommendations and lessons learned from the TE and covers the period of implementation of the project, i.e. from December 15, 2020 to August 31, 2023.

Project information table

Project Details		**Project Milestones**	**Dates**
Project Title	Micronesia Public Sector Buildings Energy Efficiency	PIF Approval Date:	August 16, 2017
UNDP Project ID (PIMS #):	PIMS 5997	CEO Approval of this project Date	August 29, 2019
GEF Project ID:	9863	Project Document Signature Date:	Dec 14. 2020
UNDP Atlas Business Un it, Award ID, Project ID:	BU: FJ110 Award ID: 00112839 Project ID: 00111186	First disbursement date in Atlas	Feb 28, 2021
Country/Countries:	Federated States of Micronesia (FSM)	Inception workshop date:	April 20, 2021
Region:	Asia-Pacific	MTR clearance slip date:	April 28, 2023
Focal Area:	Climate Change-Mitigation	TE completion date:	Sep, 2023
GEF Operational Programme or Strategic Priorities/Objectives	CCM-1 Program 1 Promote innovation and technology transfer for sustainable energy breakthroughs for decentralized power with energy usage	Planned operational closure date:	Dec14, 2023
Trust Fund:	GEF Trust Fund		
Implementing Partner (GEF Executing Entity):	Division of Energy – Department of Resources and Development/FSM		
NGOs/CBOs involvement:	n/a		
Private sector involvement:	n/a		

Financial Information		
PDF/PPG	At approval (US$ million)	At PPG/PDF completion (US$ million)
GEF PDF/PPG grants for project preparation	50,000.00	36,726.00
Co-financing for project preparation	0	0
Project	At CEO Endorsement (US$ million)	At TE (US$ million)
[1] GEF	1,776,484	1,776,484
[2] Government:	3,450,000	3,450,000
[3] UNDP Contribution	50,000	50,000
[4] Private Sector:	0.00	0.00
[5] NGOs:	0.00	0.00
[6] Total co-financing [1 + 2 + 3 + 4 + 5]:	5,276,484	5,276,484

Project description

The project known as the "Micronesia Public Sector Buildings Energy Efficiency," which will be referred to as "the project" henceforth, has now entered its final phase and is set to conclude on December 14, 2023. This initiative, classified as a medium-sized project, is focused on addressing climate change mitigation and is financially supported by the Global Environment Facility (GEF). It received approval on August 29, 2019, and the formal agreement between the UNDP, along with the national government of the Federated States of Micronesia (FSM), was signed on December 14, 2020.

The project's operations are concentrated within the FSM, an entity comprising four semi-autonomous states: Chuuk, Kosrae, Pohnpei, and Yap. This region encompasses a total of 607 islands, 74 of which are inhabited. Following the guidelines laid out by the UNDP and GEF Monitoring and Evaluation (M&E) policies[1], all medium-sized projects that receive UNDP support and GEF financing are mandated to undergo a Terminal Evaluation upon project completion. The Division of Energy (DoE), situated within the Department of Resources and Development (DoR&D), is responsible for overseeing the implementation process.

Initially, the project was designed to be executed across all four states of the FSM within a span of three years, commencing from October 2020 and concluding in October 2023. However, the project document (ProDoc) was officially endorsed only on December 14, 2020, which led to a subsequent extension of the project's completion date to December 14, 2023. Actual outcomes of this project are summarized in Table A in comparison with intended outcomes.

Table A: Comparison of intended project outcomes to actual outcomes

Intended outcome	Actual outcomes as of June 2023
Outcome 1: Enforcement of policies and guidance on the energy efficient and energy conserving design, retrofit, operation and maintenance of public sector buildings	As of August 31, In total, six deliverables were developed, comprising the preliminary draft of the EE/EC policy, regulations, and guidance, effectively resulting in a comprehensive 3-in-1 EE/EC draft policy, regulation, and guidance and is currently progressing towards obtaining final approval from Congress. Currently, there are seven public-sector buildings that adhere to the energy related provisions specified in the building EC&EE policies, along with the corresponding guidance and implementing rules and regulations. However, the project's ultimate target by the end of its term is to have 14 such compliant buildings.
Outcome 2: Enhanced management and monitoring of the energy performance of public sector buildings	A total of 14 buildings have undergone evaluation within the established and operational preliminary energy audit system to identify the most comprehensive and commercially superior energy efficient (EE) equipment. The installation of energy monitoring and reporting system (EMRS) in Pohnpei has been finalized, while the ongoing installations for Chuuk, Yap, and Kosrae are projected to be completed by November 14, 2023. Once the EMRS is operational, it will provide data at both the building and sectoral levels in an ISO50001 style, facilitating the preparation and submission of annual reports to the FSM Energy Group
Outcome 3: Increased Application of EC&EE technologies in public sector buildings and facilities	The number of EE technology application projects designed and funded for implementation as demonstrations in public-sector buildings currently stands at 11, and the end-of-project target of 14 as well. The number of EC&EE projects that have been carried out in public-sector buildings, influenced by the results and outcomes of the technology application demonstrations, currently stands at 7. This falls short of the initial target of 16 projects.
Outcome 4: Enhanced awareness and knowledge on the cost-effective application of EC&EE technologies in public sector buildings	The current number of trained public-sector building personnel capable of proficiently designing, implementing, and evaluating buildings that incorporate EC&EE technologies is 4, falling short of the project's end-of-term target of 10. The current count of public-sector buildings that have initiated energy management programs and executed EC&EE projects stands at 8, which falls short of the project's original target of 32.

Evaluation ratings table

1. Monitoring & Evaluation (M&E)	Rating[2]
M&E design at entry	5
M&E plan implementation	5
Overall quality of M&E	5
2. Implementing Agency (IA) Implementation & Executing Agency (EA) Execution	**Rating**
Quality of UNDP Implementation/Oversight	5
Quality of Implementing Partner Execution	5
Overall quality of Implementation/Execution	5
3. Assessment of Outcomes	**Rating**
Relevance	5
Effectiveness	4
Efficiency	4
Overall Project Outcome Rating	4

[1] http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf

[2] Evaluation rating indices: 6=Highly Satisfactory (HS), 5=Satisfactory (S), 4=Moderately Satisfactory (MS), 3=Moderately Unsatisfactory (MU), 2=Unsatisfactory (U), 1=Highly Unsatisfactory (HU). Ranking is same for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, and Relevance.

4. Sustainability	Rating[3]
Financial sustainability	4
Socio-political sustainability	4
Institutional framework and governance sustainability	4
Environmental sustainability	4
Overall Likelihood of Sustainability	4

Findings and conclusion

The project's strategic approach, as outlined in the project document, remained largely consistent for the entire project. This project provided a well-structured response to complex and interconnected development challenges in pursuit of its overarching goal. However, there are two areas of concern: first, the theory of change (ToC) did not adequately capture the inherent complexity of the project, and second, the project document lacked detailed information about the linkages and potential synergies among its various components as well as intermediate results. These details would provide a clearer understanding of the impact pathway leading to the project's ultimate goal.

The project partially full-filled the outcome level indicators. As of August 31, the project has formulated three policies, regulations, and guidelines related to EC&EE and is currently progressing towards obtaining final approval from Congress. Currently, there are seven public-sector buildings that adhere to the energy standards specified in the building EC&EE policies, along with the corresponding guidance and implementing rules and regulations. However, the project's ultimate target by the end of its term is to have 14 such compliant buildings. A total of 14 buildings have undergone evaluation within the established and operational energy audit system to identify the most comprehensive and commercially superior EE equipment. At present, there is no EMRS report accessible. Once the EMRS is operational, it will provide data at both the building and sectoral levels in an ISO50001 style, facilitating the preparation and submission of annual reports to the FSM Energy Group. The number of EE technology application projects designed and funded for implementation as demonstrations in public-sector buildings currently stands at 14, which matches the end-of-project target of 14 as well. The number of EC&EE projects that have been carried out in public-sector buildings, influenced by the results and outcomes of the technology application demonstrations, currently stands at 7. This falls short of the initial target of 16 projects. The current number of trained public-sector building personnel capable of proficiently designing, implementing, and evaluating buildings that incorporate EC&EE technologies is 4, falling short of the project's end-of-term target of 10. The current count of public-sector buildings that have initiated energy management programs and executed EC&EE projects stands at 8, which falls short of the project's original target of 32. Overall, the project achieved positive impacts but faced several challenges that should be addressed for future success. The project's design and execution center around three notions: reducing GHG emissions, demonstrating and replicating technology, and enhancing FMS's policy and regulatory framework. In pursuit of these objectives, the project facilitated the installation of 73 solar hybrid AC units in 3 demo buildings and 50 units of inverter AC. 40 more solar hybrid are expected to be installed in other demo buildings by Oct, 2023 and 35 units of inverter AC are expected to be installed by Sep 30, 2023. It also introduced three distinct policy initiatives, and conducted a series of capacity-building activities for stakeholders involved in the development of policies, regulations, and guidelines.

The project adeptly employed a range of strategies and approaches to address and navigate these challenges, limitations, and obstacles. In response to the setbacks caused by the COVID-19 pandemic, which significantly disrupted operations, the project management unit (PMU) and implementation partners (IPs) made effective use of online platforms such as Zoom to coordinate meetings, assess progress in activities, review and adjust work plans as needed, and provide essential support for project initiatives. In addition, the project skilfully managed logistical and communication challenges by improving communication practices, including organizing the frequent virtual meetings to maintain contact. While state government support remains limited and policies and regulations have yet to be enacted as legally binding statutes, stakeholders have demonstrated substantial interest in and commitment to ensuring the ongoing operation and maintenance (O&M) of equipment and the implementation of EC&EE practices. The project actively promoted gender equality and empowered women through a variety of measures, including maintaining gender balance in institutions and providing capacity-building.

[3] 4 = Likely (L): negligible risks to sustainability; 3 = Moderately Likely (ML): moderate risks to sustainability; 2 = Moderately Unlikely (MU): significant risks to sustainability; 1 = Unlikely (U): severe risks to sustainability; and Unable to Assess (U/A): Unable to assess the expected incidence and magnitude of risks to sustainability

Lessons learned

- PAB meetings prove their effectiveness when they incorporate the minutes of the preceding session into the agenda, enabling the evaluation of progress and the formulation of strategies to address issues
- Decentralizing the project advisory board (PAB) structure proves advantageous by bridging the gap between state-level issues and the PAB, thereby expediting the effective implementation of PAB decisions
- The payment delays within the NIM framework frequently clash with current national regulations. It has been learned that involving Ministry of Finance representatives in PAB meetings has assisted in addressing this issue by making slight adjustments to the existing rules and protocols, thereby mitigating the financial and payment difficulties faced by the project.
- The tracking of co-financing is limited. It has been observed that the effectiveness of co-financing greatly relies on the extent of stakeholders' involvement in the PAB meeting and the regular sharing of project updates, emphasizing how the co-financing amount can generate synergistic impacts, and along with concrete mechanisms for tracking co-financing, such as defined procedures, processes, and tracking files/tools.
- Followed the practice of a "systematic handover" of skills and knowledge rather than relying on "physical handovers" in order to preserve institutional memory
- The delay in selecting PAB members leads to postponed PAB meetings, consequently impacting project progress, unless we take proactive measures to mitigate these delays, the project's advancement will be affected
- Intermittent adaptability in making decisions tailored to the context is essential for promptly resolving procurement challenges and enhancing efficiency by swiftly assessing vendors and contractors within the market
- More straightforward outputs aid in achieving the intended outcomes. It was learned that when the outputs are more practical and attainable based on the implementing partner's capabilities and the country's context, coupled with SMART indicators for these outputs, there is a greater probability of achieving the project's outcomes.
- Engaging Civil Society Organizations and the media in the policy formulation process can amplify the effectiveness of a policy, especially in terms of ensuring ongoing policy advocacy and the timely realization of policy objectives
- The partnership between public and private sector organizations has created numerous opportunities for reciprocal learning while simultaneously harnessing new technologies and innovations
- Maintaining regular communication and fostering collegial relations among pertinent stakeholders facilitated the smooth execution of plans and mitigated potential obstacles and standstills
- Choosing strategically significant public buildings of substantial size for demonstration purposes enhances the effectiveness of technology transfer and has played a pivotal role in disseminating knowledge
- Superficial or symbolic participation of women does not lead to substantial outcomes; instead, it's crucial for women to be actively engaged in meaningful ways within governance mechanisms

Recommendations summary table

Rec. #	TE Recommendations	Agencies responsible	Timeframe *(start data and duration)*
1	Develop a comprehensive plan for the final three months (September 15 to December 15) that includes a clearly defined roadmap outlining all activities, their respective schedules, and associated costs. This plan aims to ensure that project objectives are successfully achieved. In addition, schedule weekly meetings at which PMU staff can discuss their individual progress under the leadership of the National Project Director *(para #70)*.	*PMU, IP and UNDP*	*Dec 14, 2023 (within the project's tenure)*
2	Collaborate with insurance companies to create and implement resilient technologies capable of withstanding recurring disasters. This partnership should also focus on establishing cost-effective and reliable insurance options. Provide training sessions on EE to support decarbonization efforts. Furthermore, establish a mechanism in compliance with EPA guidelines for the safe management and disposal of aging AC units and fixtures through a PPP approach *(para # 161, 162, and 191)*.	*PMU, IP and UNDP*	*By 2024*

3	To guarantee the sustainability of the EC&EE technologies that will expand, explore the potential for securing additional co-financing from other UN and development partner-driven initiatives. Conduct specialized training sessions for local electricians and compile information on organizations that uphold international best practices. Engage with commercial banks and formulate an exit strategy as well as a sustainability plan that includes a recommended roadmap for EC&EE technologies *(para # 65, 66, 67, 75, 111, 114, 151, and 154)*.	*PMU, IP and UNDP*	*By 2024*
4	Arrange sessions on HACT to educate IPs about a systematic approach to procurement. These sessions should encompass all aspects, techniques, and outcomes related to HACT, including spot checks of IPs *(para # 121)*.	*UNDP*	*In regular basis*
5	Identify training needs before providing capacity-building opportunities to apply acquired skills effectively. In collaboration with the national and state governments, coordinate intense training sessions that incorporate provisions for refresher courses. Develop training curricula that include simulations and establish local resource persons through a training-of-trainers program. Applying a cascading model, utilize these trained individuals as resource persons in subsequent training sessions *(para # 46, and 218)*.	*PMU and IP*	*Dec 14, 2023 (within the project's tenure)*
6	Implement the gender plan by integrating the proposed activities into the revised work plan. Advocate for the judicious use of a scenario-based gender-responsive costing framework during project formulation. Engage stakeholders in GESI-sensitive planning and budgeting, referencing this framework *(para # 76, 169, 172, 176, and 213)*.	*PMU, IP and UNDP*	*In regular basis*
7	Engage the private sector in EC&EE initiatives by allocating subsidies from the government to create an environment conducive to investment. Involve the private sector in training, workshops, and meetings to encourage its participation in EC&EE markets. Collaborate with various development partners to enhance these efforts *(para #40, 99, 102, and 218)*.	*PMU, IP and UNDP*	*By 2024*
8	Capture and disseminate best practices and lessons learned by developing concise case studies that highlight electricity savings, GHG emission reductions, job creation, and fossil fuel savings. Produce policy briefs utilizing data from before and after the implementation of EC&EE technologies, transforming them into a valuable resource mobilization toolkit. Utilize various media and communication channels to share essential knowledge on EC&EE through daily posts that generate significant interest *(para # 165, 180, and 189)*.	*PMU, IP and UNDP*	*Dec 14, 2023 (within the project's tenure)*
9	To support the growth of EE & EC initiatives in the future, the project needs to (i) involve Civil Society Organizations and the media in the development of policies to advocate for policies and achieve policy goals promptly, (ii) develop voluntary EE&EC guidelines, (iii) adopt a PPP model that aligns with FSM's renewable energy sector policy and tackles policy-related obstacles, and (iv) promptly endorse these policies to strengthen this sector through collaboration among development partners, financial institutions, and CSOs *(para # 35, 73, and 99)*.	*PMU, IP and UNDP*	*In regular basis*

Table of content

2. Introduction

1. The project known as the "Micronesia Public Sector Buildings Energy Efficiency (MPSBEE)," which will be referred to as "the project" henceforth, has now entered its final phase and is set to conclude on December 14, 2023. This initiative, classified as a medium-sized project, is focused on addressing climate change mitigation and is financially supported by the Global Environment Facility (GEF). It received approval on August 29, 2019, and the formal agreement between the UNDP, along with the national government of the Federated States of Micronesia (FSM), was signed on December 14, 2020.

2. The project's operations are concentrated within the FSM, an entity comprising four semi-autonomous states: Chuuk, Kosrae, Pohnpei, and Yap. This region encompasses a total of 607 islands, 74 of which are inhabited. Following the guidelines laid out by the UNDP and GEF Monitoring and Evaluation (M&E) policies[4], all medium-sized projects that receive UNDP support and GEF financing are mandated to undergo a Terminal Evaluation (TE) upon project completion. The Division of Energy (DoE), situated within the Department of Resources and Development (DoR&D[5]), is responsible for overseeing the implementation process.

2.1 Purpose and objective of the TE

3. The primary objective of conducting the TE is to evaluate the extent to which the project's outcomes align with the anticipated results, and to extract insights that can enhance the long-term viability of the project's benefits, as well as contribute to the overall advancement of UNDP's initiatives. Another pivotal aim of this TE is to reinforce responsibility and openness, while also gauging the degree of achievements made by the project.

4. As per the ToR (see Annex-1), objectives of the evaluation were to:
   - assess the achievement of project results supported by evidence (i.e., progress of project's outcome targets),
   - assess the contribution and alignment of the project to relevant national development plans or environmental policies,
   - assess the contribution of the project results towards the relevant outcome and output of the Multi Country Programme Document (MCPD) & United Nation Sustainable Development Cooperation Framework (UNSDCF),
   - assess any cross cutting themes, viz. poverty alleviation, improved governance, climate change mitigation and adaptation, disaster prevention and recovery, human rights, capacity development, South-South cooperation, knowledge management, volunteerism, etc., as relevant and gender results using the gender scale effective scale ,
   - Contribute to exam on the use of funds and value for money,
   - assess the impact of COVID-19 on project's implementation, and
   - draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming

2.2 Scope

5. The TE undertook an evaluation of the project's five criterion such as relevance, effectiveness, efficiency, sustainability and impacts by juxtaposing it against the projected outcomes articulated in the project's "results framework." This TE adhered to the criteria delineated in the GEF guidelines. The TE evaluated the project's performance in accordance with the six evaluation criteria outlined by the Organization for Economic Co-operation and Development's Development Assistance Committee (OECD-DAC): relevance, effectiveness, efficiency, sustainability, impact, and the integration of human rights, gender, and other cross-cutting issues. This TE was conducted in relation to the anticipated accomplishments. The TE report encompasses the timeframe spanning from the project's commencement on December 14, 2020, through August 31, 2023.

[4] http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf

[5] The FSM DoR&D serves as the IPs for this project. It bears the responsibility and accountability for project management, including the M&E of project interventions, the attainment of project objectives, and the efficient utilization of UNDP resources.
Initially, it was planned that the PAB would convene at least twice annually for two to four hours each session. These meetings would primarily focus on reviewing the PIR from the previous year and formally endorsing the AWP for the upcoming year of project operations.

2.3 Study methods and approach

6. The TE employed a combination of methodologies, namely a "summative approach," "formative approach," and "constructive and participative approach." In order to effectively attain the key goals and objectives of the TE, the TE consultant utilized a mixed methods approach, with particular emphasis on qualitative data and information.

2.4 Data collection and analysis

7. Gathering qualitative data, information, and evidence encompassed the utilization of various tools and techniques, including: (i) initial briefing meetings, (ii) review of documents (see Annex-2), (iii) conducting key informant interviews (KIIs), and (iv) use of most significant change technique. Throughout the desk review phase, the TE consultant accumulated quantitative data and systematically organized it into tables to facilitate validation during the KIIs. Whenever feasible, project management information system (MIS) data was integrated. To ensure the accuracy and dependability of the data, the TE consultant adopted triangulation techniques, cross-comparing and cross-referencing data from multiple sources. This method was pivotal in reinforcing the credibility of the findings and the soundness of the conclusions.

8. A 13-day in-country mission was conducted by the TE Consultant from August 27 to September 8, 2023, including travel, with a specific focus on two states: Yap (situated in the westernmost part of FSM) and Pohnpei (the capital city of FSM). This mission facilitated engagement with stakeholders at various tiers (see Annex-3). The TE consultant embraced a hybrid approach for data collection and analysis, effectively merging both quantitative and qualitative data and then cross-validating the outcomes from each category. To uphold the authenticity and consistency of the data, the TE consultant adopted a triangulation strategy, comparing primary information with secondary data (see Annex-4).

2.5 Ethics

9. The TE was conducted following a methodology that prioritized independence, impartiality, and a thorough process. This approach maintained high standards of personal and professional integrity, adhering closely to the principles delineated in the Ethical Guidelines for Evaluations by the United Nations Evaluation Group (UNEG) and the UNDP GEF M&E policies. Of particular significance was the adherence to the guidelines set out in the document titled "Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF financed Projects (August, 2020)."

2.6 Limitations to the evaluation

10. The field mission was between Aug 27 and Sep 8, 2023 (see Annex-5). The TE consultant encountered several constraints while collecting data and information. Due to the presence of DoR&D officials in Yap accompanying Presidential visits during the field mission, it was not feasible to have in-person meetings. As a result, an online platform was used for communication. The project's Administrators and Finance Officer was on leave and out of the country, causing a delay in obtaining financial data. Nevertheless, other PMU staff, in collaboration with her, were able to bridge this gap. Visits were made to only two out of four States, but secondary data and interactions with energy efficient (EE) Officers were gathered from all four States. The project staff were heavily occupied with execution activities, leaving limited time for interactions. Obtaining organized data proved challenging because the MIS lacked robustness. Implementation partners (IPs) and stakeholders had limited availability for interviews. In spite of these difficulties, the TE consultant adeptly tackled these hurdles by utilizing different approaches. These included an in-depth analysis of the project's most recent data, engaging in comprehensive discussions and reflections with the PMU staff, and being accessible even during off-hours for interviews, all aimed at ensuring the provision of top-notch data and well-supported information.

2.7 Structure of the TE report

11. As stipulated by the "Guidance for conducting TE of UNDP-supported, GEF-financed projects (2020)" and in accordance with the provided structure in the Terms of Reference (ToR), the TE report has been organized into five chapters and corresponding annexes.

3. Project description

3.1 Project start and duration, including milestones

12. Initially, the project was designed to be executed across all four states of the FSM within a span of three years, commencing from October 2020 and concluding in October 2023. However, the project document (ProDoc) was officially endorsed only on December 14, 2020, which led to a subsequent extension of the project's completion date to December 14, 2023. The significant milestones of the project are detailed in Annex-4.

3.2 Development context

13. Aligned with the project's objectives and scope, the design phase placed notable emphasis on integrating the broader developmental landscape of the FSM. This encompassed the integration of policy and regulatory aspects, institutional considerations, information strategies, technical facets, awareness-building elements, and financial dimensions within the project's framework. Additionally, the project's objectives and scope were shaped with careful regard for national priorities and UNDP's worldwide commitments, notably the UNDAF Outcome.

3.3 Problems that the project sought to address: threats and barriers targeted

14. From a range of challenges, the project highlighted five primary threats or barriers such as: information, technical, capacity, policy, regulatory, and institutional issues. Other challenges were related to energy monitoring and reporting, encompassing information aspects, technical obstacles, capacity development concerns, financial limitations.

3.4 Immediate and development objectives of the project

15. This project was meticulously crafted to contribute toward FSM's national target of achieving a 50% enhancement in EE by the year 2020[6]. The overarching "goal" of the project centered on enhancing specific energy consumption while curbing greenhouse gas (GHG) emissions within the realm of building sectors. To realize this "goal," the project set out five objectives such as:
    - Formulate policies, practices, and applications that establish conducive conditions for energy conservation and efficiency (EC&EE) within public sector buildings.
    - Develop a Building Energy Audit System (BEAS) tailored for the public sector.
    - Create demonstrations of EC&EE technologies.
    - Implement demonstrations of building EC&EE, with a particular focus on the predominant electricity usage for air conditioning and lighting.
    - Exhibit, replicate, monitor, document, and publicize the most effective commercially available energy saving measures (ESMs), especially in areas like ventilation, cooling, lighting, and hot water supply. This was intended to benefit public sector buildings in FSM and offer cost-effective energy solutions for the private sector.

16. The overarching objective of the project revolved around enhancing the application of EC&EE techniques and practices in the design, retrofitting, and ongoing operation and maintenance (O&M) of public sector buildings.

3.5 Expected results

17. Four outcomes were designed to realize the overall goal of the project (refer to **box-3** for theory of change).
    - Outcome 1: Enforcement of policies and guidance on the energy efficient and energy conserving design, retrofit, operation and maintenance of public sector buildings
    - Outcome 2: Enhanced management and monitoring of the energy performance of public sector buildings
    - Outcome 3: Increased Application of EC&EE technologies in public sector buildings and facilities

[6] By showcasing, replicating, monitoring, and disseminating the achievement of a 50% reduction in energy consumption in public sector buildings, the project is strategically aligned with the FSM's national goal of achieving a 50% enhancement in EE by the year 2030. Given the unavoidably high cost of electricity in the FSM (where tariffs in 2018 ranged from 39 to 77 US cents per kWh), private sector entities stand to benefit from studying and emulating the most effective commercially available Energy Saving Measures (ESMs), especially those pertaining to ventilation, cooling, lighting, and hot water supply. These ESMs will be demonstrated, replicated, closely monitored, documented, and shared by the project, serving as valuable models for the FSM's public sector buildings.

- Outcome 4: Enhanced awareness and knowledge on the cost-effective application of EC&EE technologies in public sector buildings

3.6 Total resources

18. The total cost of the project was US$ 5.3 million. Within this sum, the GEF Trust Fund provided US$ 1.8 million, accounting for 34% of the total. The Government of FSM contributed US$ 3.4 million, constituting 64%, and UNDP offered support with US$ 50,000, which corresponds to 2%.

3.7 Main stakeholders: summary list

19. The UNDP functions as the executing agency for the project, with the DoE under DoR&D serving as the primary national executing partner. According to the ProDoc, key partners at the National and State levels include the Departments of Health and Education, as well as the four state power utilities namely, Chuuk, Kosrae, Pohnpei and Yap, who are responsible for coordinating and co-financing demonstration projects. Additionally, the FSM Energy Group[7], composed of members from government departments, along with private sector entities (particularly hardware suppliers, commercial buildings, and engineering firms), and the management/administration of designated pilot public sector buildings, play pivotal roles as well.

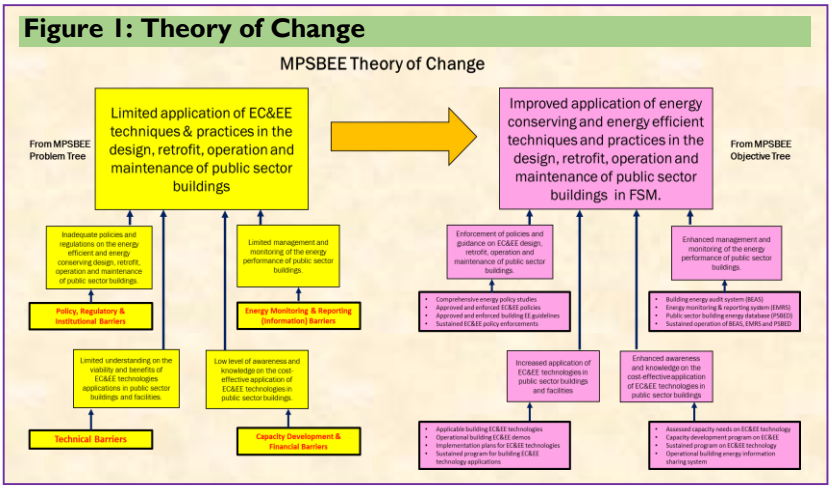
The project advisory board (PAB) plays a crucial role in tackling and resolving the project's issues and concerns, ensuring the project stays on the right course (more details about the PAB are provided in section 4.2.1).

3.8 Theory of change

20. The TE conducted a comprehensive evaluation and found the project's results framework, which is structured into four components comprising four outcomes, 16 outputs and 70 activities.
The assessment also revealed that the project's strategy, as outlined in the project document, remained largely consistent throughout the project's duration.

21. The ToC followed a systematic progression, connecting various elements: Barriers ➔ Outputs ➔ Outcomes ➔ Impact Drivers and Assumptions ➔ Intermediate States ➔ Impacts. Financial resources were allocated to execute planned activities aimed at overcoming barriers, which in turn were intended to achieve the anticipated 16 outputs. These outputs were designed to contribute to the attainment of three targeted outcomes and, ultimately, the overarching project objective. Each outcome was accompanied by a set of indicators and targets, vital for monitoring project performance across both the Mid-Term Review (MTR) and TE phases.

Figure 1: Theory of Change



The project's Theory of Change (ToC) is not sufficiently robust, as certain project outputs seem to resemble outcomes, and not all indicators for these outputs adhere to the SMART criteria.

22. No major modifications were introduced to the project's components, outcomes, outputs, activities, or project demonstrations. However, adjustments were made to the budget to accommodate implementation delays, especially in Activity 1.1.6, Activity 1.1.7, and Activity 2.1.1.2. The ToC outlined the existence of multiple barriers (policy, regulatory, institutional, information, technical, capacity development, and financial) that hinder the achievement of FSM's 50% energy efficiency target. The project aimed to address these barriers through a combination of incremental interventions, alongside other initiatives. The expected

[7] The FSM Energy Group plays a crucial role in overseeing and coordinating activities within the energy sector of the FSM. It consists of members from key government departments and maintains close interactions with the Government of FSM, the Regional Energy Committee (REC), the Association of Micronesian Utilities (AMU), and the four State Energy Groups.

outcome of these efforts was a reduction in energy demand and GHGs emissions from public sector buildings.

4. Findings

4.1 Project design/formulation

4.1.1 National priorities and country driven-ness

23. In the context of FSM, the escalating intensity of typhoons, mounting challenges faced by low-lying atoll populations, deteriorating ecosystems, and burgeoning human health concerns constitute significant risks associated with climate change. The government of FSM (GoFSM) is actively addressing climate change by curbing the release of heat-trapping GHGs into the atmosphere. This effort encompasses the reduction of GHG emissions from primary sources such as power plants, factories, vehicles, and agricultural activities, while simultaneously promoting the adoption of solar power for EC&EE. In addition, the preservation and enhancement of forests, oceans, and soil play a pivotal role in absorbing and sequestering GHGs, forming yet another integral component of the overall solution, among other strategies.

24. The project is closely aligned with the priorities set by the nation and the proactive approach FSM is taking in the energy sector. The Nationally Determined Contributions (NDC) of FSM outline specific targets, such as a goal to achieve a more than 65% reduction in carbon dioxide ($CO_{2)}$ emissions from electricity generation by 2030 compared to 2000 levels. This and other targets emphasize several key points: the needs to (i) increase the use of renewable energy sources to enhance the energy system's resilience in the face of challenges like rising sea levels and extreme weather events, (ii) prioritize the domestic production of renewable energy to reduce vulnerability to disruptions in global fossil fuel supply chains caused by climate change-related issues, (iii) reduce CO_2 emissions, (iv) decrease the demand for, and the usage and transportation of, diesel fuel, and (v) lower emissions of non-CO_2 pollutants associated with diesel combustion, such as black carbon and methane.

25. Furthermore, FSM's Climate Change Policy (2009) has a strong focus on safeguarding the right of its residents to live sustainably on the islands and makes a commitment to maintain a negative-carbon status through both mitigation and adaptation measures. The objectives and goals of the project are in harmony with FSM's National and State Energy Policy of 2012, the FSM Energy Master Plan o 2018, and the National and State Energy Action Plan of 2012. In accordance with the priorities outlined in the FSM Master Plan (2018), all four states have initiated efforts to adopt clean energy. For instance, the Kosrae Master Plan (2018) proposes to install 6.3MW of solar PV generation to address the energy crisis. The GoFSM is committed to reducing energy costs through an EC&EE approach. In addition, the project aligns with FSM's pursuit of SDG-7, which focuses on ensuring access to affordable and clean energy.

26. In 2021, FSM became a member of the 'Climate and Clean Air Coalition', thereby demonstrating its commitment to taking action to mitigate short-lived climate pollutants. Despite Micronesia's limited contribution to global GHG emissions, the nation faces some of the most severe impacts of climate change. Recently, FSM converted its national climate change framework strategy into a National Climate Change Action Plan which prioritizes key areas including climate-resilient industries and services and sustainable energy. The primary goal of the project was to enhance the application of EC&EE techniques and practices during the design, retrofitting, and O&M phases of public sector buildings. These buildings should already have been in alignment with the country's national energy master plan and state energy action plans but many were not. This objective is consistent with the national agenda to enhance energy efficiency, reduce reliance on fossil fuels, and optimize the utilization of renewable energy sources.

27. Furthermore, the project is in harmony with the United Nations Pacific Strategy for the period from 2018 to 2022, specifically under Outcome 1, which focuses on climate change, disaster resilience, and environmental protection. It is also aligned with the UNDP's Sub-Regional Programme Document for the same period, particularly Outcome 1, which aims to bolster the resilience of both people and ecosystems in the Pacific against the impacts of climate change, climate variability, and disasters, while simultaneously strengthening environmental protection efforts. The UNDP's priorities in the realm of nature, climate and energy (NCE) are closely linked with the country's own priorities pertaining to climate change mitigation, nature conservation, and energy efficiency.

4.1.2 Social and Environmental Safeguards

28. During the project development phase, UNDP applied its Social and Environmental Screening Process (SESP) to identify potential social and environmental risks. This involved conducting a thorough assessment using the designated SESP toolkit. In this analysis, certain overarching principles were integrated to enhance social and environmental sustainability and social and environmental risks were identified and managed through a series of five key questions.[8] Stakeholders who were interviewed acknowledged the credibility of the Social and Environmental Screening (SES) assessment, which categorized the project's risk level as "low." They also commended the highly consultative approach taken during the assessment, which involved engaging stakeholders at both the national and state levels, and the subsequent validation of the collected data. Specifically, the assessment identified low risks based on factors such as the handling and disposal of materials, the level of community health and safety, and the potential release of pollutants and waste into the environment. The project's implementation was also considered susceptible to risks associated with the COVID-19 pandemic and extreme climate events like typhoons and windstorms.

29. During consultations and interviews, stakeholders pointed out that certain risks identified during the ongoing demonstration projects in public buildings still exist. Therefore, it is crucial to implement the mitigation measures prescribed in the agreed plan. Fortunately, the Project Implementation Report (PIRs) have not yet identified any significant issues that needed to be addressed. There is some limited evidence suggesting that best practices for recycling and waste disposal were considered in the design of the demonstration buildings. The project is committed to ensuring that the all old equipment and materials that are replaced are properly disposed of in order to prevent adverse impacts on the local environment and community. Stakeholders are fully aware of these concerns and are dedicated to adhering to the regulations of the Environmental Protection Agency (EPA).

30. Given that the project focused primarily on small-scale demonstrations and the installation of equipment in existing public buildings, no major environmental risks were anticipated. The project's records indicate that the SESP was drafted in Sep 16, 2022[9] and approved in Sep 30, 2022. Having staff, including an EE officer based at the state level facilitated the management of minor day-to-day risks in a mutually beneficial manner during the project's implementation. The social and environmental assessment was not subject to periodic updates, as the project lacks a dedicated safeguards officer. Instead, an annual rapid assessment of the SESP is conducted just before a PIR is drafted. Notably, the COVID-19 pandemic emerged as a social and environmental risk that was not foreseen during the project's initial design. The pandemic resulted in delays in the project's timeline because government shutdowns and border closures were enforced following FMS's declaration of an emergency. To address these delays, the PMU expedited the implementation of activities that were affected by the border closure.

31. In 2022, the Environment and Social Impact Assessment (ESIA) specialist submitted a draft Environmental and Social Management Framework. This project is expected to yield positive short and long-term benefits for the overall development and growth of the country by enhancing the EE of FSM's public-sector buildings. Since the project does not require land or other resources, no negative gender-and social safeguard concerns are anticipated. In fact, the project has environmental benefits because it promotes EC&EE technologies.

32. During consultations in Yap and Pohnpei, the TE consultant did not hear of any social or environmental concerns, nor did he observe any exacerbation of existing social and environmental risks. UNDP typically ensures compliance with environmental legislation and mitigates environmental impacts in large construction-related projects. However, since the project involves primarily non-structural aspects and focuses on software elements, it did not foresee significant environmental risks.

33. However, there is room for improvement. For instance, the TE consultant did not find any evidence indicating that the project had engaged in periodic reassessments of risks. This fact suggests that the risk identification carried out during the project's design and inception phases may have been a one-time occurrence. Ideally, though, since risks are dynamic and evolve over time, SES assessments should be

[8] (i) potential social and environmental risks, (ii) level of significance of the potential social and environmental risks, (iii) overall project risk categorization, (iv) requirements of the SES are relevant, and (v) social and environmental assessment and management measures required to address moderate and high risks

[9] Updated Social and Environmental Screening Procedure (SESP) for for this was developed by Chiara Franco, APLŸS Consulting, Victoria Guisado, Guisado Environmental Valuation, Norleen Oliver, Lovelle Consulting. It incorporated (i) Integrating Overarching Principles to Strengthen Social and Environmental Sustainability, and (ii) Identifying and Managing Social and Environmental Risks.

conducted at regular intervals. Furthermore, the project's risk and issues logs[10] were not adequately updated in the ATLAS system. In addition, it would be advantageous for SES assessments to incorporate gender-related issues as doing so would allow the project to periodically gain insights into how different risks may affect men and women differently and lead to a more comprehensive understanding of the project's impact.

4.1.3 Analysis of results framework: project logic and strategy, indicators

34. The project's results framework encompasses a single goal, a single objective, and four outcomes, each supported by corresponding indicators, baselines, and mid-term and end-of-project targets, as well as mechanisms for assessing success and critical risks and assumptions. Altogether there are 70 activities distributed across 16 outputs. Stakeholders confirmed that this project presents a well-structured response to complex, multidimensional, and interconnected development challenges to achieving its overarching goal. However, stakeholders highlighted certain issues. Firstly, they noted that the ToC does not reflect the level of complexity inherent in the project. In addition, stakeholders suggested that the ProDoc should have provided more comprehensive details regarding linkages and potential synergies among the various components as well as regarding intermediate results, which would elucidate the impact pathway leading to the project's ultimate goal. Internal coherence was also compromised by delays resulting from both internal and external challenges. For instance, the sequence of events, including the delivery of products and the execution of activities, was not always the most logically organized. For example, it would have made more sense to use newly developed or revised policies, guidelines, and institutional frameworks—those drafted with project support—to inform the pilot work on demonstration buildings rather than older ones.

35. To attain the FSM's 50% EE target, the project aims to improve all major energy-consuming public-sector buildings, with the initial demonstration phase serving only as a precursor to the successive replication phase. To facilitate this transition, the project established an energy audit system and implemented a mechanism for regularly monitoring, reporting on, and evaluating the energy consumption of buildings through FSM energy utilities. This process includes disseminating the results and showcasing energy and environmental conditions before and after implementation in the demonstration buildings. Furthermore, the project played a role in facilitating the development and enforcement of FSM's EE regulatory framework in public-sector buildings, including the introduction of voluntary EC&EE building guidelines. However, it has been noted that success in some tasks, such as publicizing the results and enforcing the policy, is currently only moderate, an evaluation suggesting the need for certain enhancements and improvements.

36. To ensure they are systematically executed, all 16 outputs were incorporated into the multi-year work plan. A careful evaluation of these outputs reveals that some of them are unusually comprehensive in scope, resembling outcomes more than merely outputs, and that others appear even to extend beyond the direct control of the project and UNDP. For instance, outputs such as "approved and enforced policies and institutional arrangements" (Output 1.2), "approved and enforced building EE guidelines" (Output 1.3), and "established and operational public-sector buildings energy use database" (Output 2.3) will require significantly more time and resources to fully develop and solidify than the project currently has.

37. To elaborate, the processes of approving policies and modifying institutional arrangements extends beyond the capabilities of the Project Management Unit (PMU) and even of the DoR&D. These processes necessitate engagement with various other institutions, in some cases, with the Parliament itself. Making this change would require engaging in a series of collaborative efforts with other civil society organizations (CSOs) and an extended period of time. Without the active participation, support, and cooperation of the relevant entities responsible for policymaking, implementation, and enforcement, such as national and state governments and the parliament, the IP, DoR&D, will face challenges in achieving the desired outcome for component 1.

38. The ProDoc outlines a total of 13 indicators to gauge project achievements, four at the goal/objective level and nine at the outcome level. However, not all of these indicators adhere to SMART criteria, a fact which may impede their effectiveness. At the output level, there is a lack of defined targets and means of verification, which complicates the assessment of output delivery and the determination of specific

[10] The inception report recommended the addition of five items to the risk log, which include: (i) limited and often prohibitively costly access to the remaining three states, (ii) potential influence on government support for the project due to changes in state government administration, (iii) impacts of Covid-19 on project implementation activities, (iv) potential delays in the procurement or availability of EE technologies due to Covid-19 or the unique island nation location and demand, and (v) Covid-19-related border restrictions affecting expatriates and their impact on project implementation.

contributions to outcomes, or project attribution. The ProDoc also miss to include gender-specific or sex-disaggregated indicators.

39. According to the ProDoc, it is mandatory to report on project progress through PIRs based on indicators. Up to this point, however, only two PIRs have been submitted: the first covering the period from December 2020 to June 2022 (19 months), and the second spanning from July 2022 to June 2023 (12 months). Originally, the MTR was planned to take place after the submission of the second PIR to the GEF. However, there where slight deviations from the original timeline due to the PMU's having to juggle multiple tasks simultaneously to meet the project's objectives.

4.1.4 Assumptions and risks

40. During the project formulation phase, five assumptions/risks were identified. The first assumption was that the project would receive continuous commitment, support, and active participation from the national and state governments in efforts related to EC&EE in the building sector. The second assumption pertained to securing full and continuous commitment and support from state governments for the implementation of EC&EE policies in the building sector. The third assumption involved maintaining continuous commitment and support from public-sector buildings for continuing to build their EC&EE systems even after the project has come to an end. The project schedule also assumes that state governments and the private sector will fully endorse and commit to replicating the successful outcomes of the demonstration projects. The fifth assumption was that the national and state governments would provide continuous commitment and support for building EC&EE applications.

41. These assumptions/risk underwent a thorough assessment that considered various internal and external factors influencing overall project performance. Internal factors included the familiarity of stakeholders with the national policy context and their established practices on the ground. In addition, the project incorporated assumptions and risks, including external factors that influenced the findings, in both the project identification form and the project document.

4.1.5 Lessons from other relevant projects (e.g. same focal area) incorporated into project design

42. This project was grounded in the knowledge acquired from previous regional EC&EE projects. During the project's design phase, lessons learned from other projects were identified and analyzed, and these insights were consistently applied throughout project implementation. Drawing from past experiences and the lessons gleaned from EC&EE projects in the region, each component of this project incorporated activities aimed at enhancing gender balance and fostering women's participation in the planning and execution of EC&EE measures. Furthermore, the deployment of EC&EE technologies in public-sector buildings in FSM carefully considered the potential involvement of women. The project considered women's working in both managerial and technical roles within relevant national and state agencies and institutions as women can play pivotal roles in the design, development, and implementation of an energy project.

4.1.6 Planned stakeholder participation

a. Involvement of various categories of project stakeholders

43. The designated stakeholders, as outlined in the ProDoc, include (i) DoR&D, (ii) national and state-level governments, particularly and departments focusing on health and education, (iii) state power utilities, including Chuuk Public Utility Company (CPUC), Kosrae Utility Company (KUA), Pohnpei Utility Company (PUC), and Yap State Public Services Corporation (YSPSC), (iv) the FSM energy group, (v) private-sector entities, especially hardware suppliers, commercial buildings, and engineering firms, and (vi) managers and administrators of designated pilot public sector buildings. Notably, the DoR&D played a significant role as a stakeholder in this project. Stakeholders expressed their appreciation for the project's efforts in planning and engaging with these diverse stakeholders as its collaborative approach allowed for mutual learning and created synergies among stakeholders. Consequently, the project was able to secure both technical and financial assistance. However, it is worth noting that the project faced initial challenges related to the slow pace of implementation during the early months, which was attributable to the pandemic and delays in human resource management. The result was that the engagement of these stakeholders was somewhat lower than originally planned and expected. It was said that given the urgency to meet the project's targets, there was limited time available for coordinating and consolidating stakeholders' efforts.

b. Defining clear roles and responsibilities for these stakeholders

44. The project played a crucial role in establishing well-defined roles and responsibilities for stakeholders to prevent the duplication of their efforts. For instance, national and state-level departments actively participated in the selection of demonstration sites from among many options. According to the project's modality, these departments, as the owners and operators of the demonstration buildings (which include hospitals and schools), were expected to assist in generating co-funding as well as facilitate the implementation and management of the demonstrations in a participatory manner. That said, the project encountered challenges in generating the agreed-upon or expected co-funding[11] from the state governments. In fact, the PIR for 2022 highlighted the need for the PMU to coordinate with project stakeholders, particularly state governments, to secure resources and systematically document the project's results and lessons learned.

45. State utilities provided technical support and backstopping in the form of data sharing, consultations about, and recommendations for potential demonstration sites. The ProDoc outlined their responsibilities, which included logically coordinating the design and implementation of the demonstrations, facilitating co-funding in selected public-sector buildings in each state, regularly monitoring the progress of project activities under their purview, liaising and coordinating with all other relevant government agencies to remove barriers, assisting in gathering and reporting on public building energy data, and providing technical support to the project (see Annex-7).

    The utility company has proven to be cooperative and forthcoming in furnishing details on utility billings for specific buildings, alongside other technical information, including insights on inefficient government buildings. Notably, in Yap state, the Administration Building, which was integrated into the project, was recommended by the utility company, alongside other potential future projects. However, the utility company did not play a role in the actual installation of the solar units. Their involvement was primarily centered around participating in workshops and training sessions on energy-saving processes. Post-installation, they initially expressed apprehensions regarding the functioning of the units and their potential impact on their electricity grids. Subsequently, they concluded that the units have no impact on their grid. The project also shared copies of the owner's manual of the AC units to enhance their understanding of the unit's mechanics. Overall, the project has maintained a positive working relationship with the utility company. Furthermore, the FSM DoR&D is extending additional support to utility companies through grants provided by ADB, World Bank, and other donors/development partners.

46. As called for in the project's mandate, the FSM energy group provided input and advice on the assessment of proposed policies, the design and implementation of demonstration plans, and the conduction of training needs assessments, albeit in varying ways. Their systematic engagement was also impacted by delays in project implementation. In addition, the Project Advisory Board (PAB[12]) played an instrumental role in reviewing the project's status and contributing technical insights that facilitated the timely execution of decision-making processes. About PAB and its functions, stakeholders expressed:

    > *"The PAB is led by a competent national project director (NPD[13]), who also serves as the director of DoR&D. The minutes of PAB meetings were circulated to UNDP's country office and regional office. The feedback received indicates that the PAB was responsive and made timely decisions. The project manager[14] participates in PAB meetings as a non-voting member, assuming the role of "member-secretary" and is responsible for summarizing the discussions and conclusions in a report issued after each meeting. In order to uphold UNDP's ultimate accountability, decisions made by the PAB adhered to standards that prioritize management for development results, value for money, fairness, integrity, and transparency.*

[11] During the inception phase, the primary focus of the PMU is to validate and verify all the committed co-financing. In cases where previously identified co-financing options are no longer viable, the team is actively engaged in seeking and confirming alternative sources of funding. Additionally, the team is exploring potential co-financing opportunities with other projects that align with the goals of this project.
All four states have requested the original commitment letter to be provided to them, as it can support their applications for funding from sources like the OIA or COMPACT funds. During the inception phase, it was successfully confirmed that co-financing funds from the DoR&D amount to US $1,650,000, funding from DoR&D/ACSE totals US $300,000, DoR&D/EU EDF-11 provides US $100,000, and UNDP has committed US $50,000 for this project.
[12] Members of the PAB representing the government are appointed by the Governor. There are a total of five PAB members: one each from the Energy Division at DoR&D, the UNDP Pacific Office Representative or their designate, and one each from the states of Yap, Kosrae, and Chuuk.
[13] NPD, who is also the Director of the Energy Division, assumes the role of overseeing the PMU on a weekly basis. This oversight encompasses strategic guidance and direction for project implementation, conducted in close collaboration with UNDP. The NPD is also responsible for providing technical and institutional coordination between the project and other government departments.
[14] The National Project Manager assumes responsibility for the day-to-day management and decision-making processes of the project. This includes the mobilization of all necessary project resources, the supervision of staff, consultants, and sub-contractors, and reporting to the Assistant Secretary for the Energy Division at DoR&D. The Assistant Secretary provides strategic guidance to ensure the project's successful implementation.

4.1.7 Linkages between project and other interventions within the sector

47. The project demonstrated a strong connection with other initiatives and programs implemented by development partners in FSM. Donors and development partners such as the World Bank (WB), Asian Development Bank (ADB), European Union-Secretariat of Pacific Community (EU-SPC), Japan International Cooperation Agency (JICA), and similar organizations collectively work to create a supportive environment for the project's efforts. Among the various programs administered by these development partners, one thematic components of the EU/Secretariat of Pacific Community (SPC) program specifically addresses the adoption of EC&EE technologies to reduce electricity consumption and lower electricity tariffs.

4.1.8 Gender responsive of project design

48. Annex N of the ProDoc clearly recognizes gender equality concerns and women's issues that pertain to the division of labor based on gender. For example, it acknowledges the impact on women who work as doctors and nurses in state hospitals, teachers in schools, and staff in government administration buildings, highlighting that they stand to benefit significantly from the improvements made to the air conditioners (AC) units in these venues. While projects like this one are often portrayed primarily as focusing on technology, equipment, and the scientific measurement of GHG emission reductions, it is vital to redefine the purpose of such investments and activities to include their potential to positively affect the daily lives of individuals.

49. Considering that the division of labor and energy consumption patterns can differ significantly between men and women, a thorough examination of the gender-related impacts and ramifications of this project can provide valuable insights into how future projects can most effectively enhance the quality of life for both men and women. To summarize, despite the provisions outlined in the ProDoc, translating these considerations into practical implementation remains a challenging task.

4.2 Project implementation

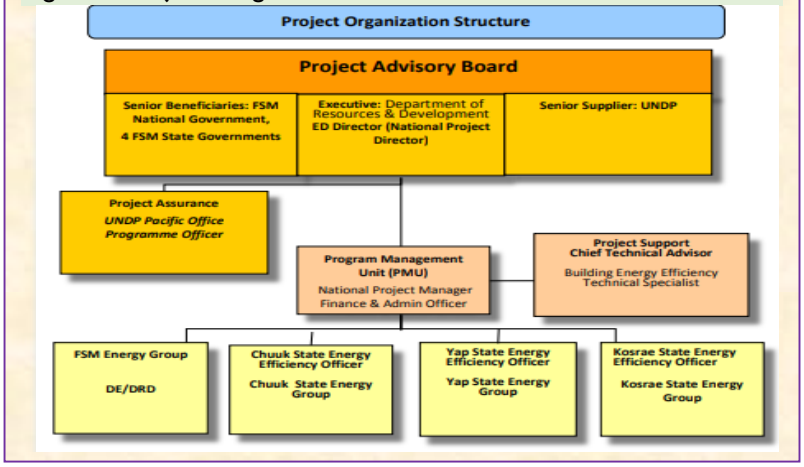
4.2.1 Adaptive management

a. Adhered to NIM, decentralized PAB, and built the capacities of PMU

50. The project was well-received by its stakeholders because it employed adaptive management based on local contexts, an approach designed to improve results while still remaining within the terms of the overarching project framework. To attain better outcomes from its initiatives, the project followed the national implementation modality (NIM) and used a decentralized PAB structure that extended down to the state level. In addition, it enhanced the capacities of the PMU. Under the NIM, the FSM's Energy Division of the DoR&D acted as the nodal IP and was overseen by UNDP. It took responsibility for executing, monitoring, and evaluating project interventions, ensuring project outcomes were achieved as planned, and maximizing resource utilization using a 'value for money' approach.

51. The five members of the PAB, who included representatives from each state and the director of the Office of Planning and Budget offered strategic guidance and supervised operational aspects. This decentralized PAB structure proved beneficial for linking state-level issues to the PAB and vice versa and facilitating the prompt and effective operationalization of PAB decisions. This structure also aided in generating co-funding and enhancing ownership, thereby also promoting the sustainability of the project's initiatives. The PMU was established at the DoR&D to oversee the day-to-day execution of the project and the implementation of specific project activities. UNDP ensured quality assurance and supported the PAB and PMU by engaging in impartial project oversight and monitoring. The PMU was led by a part-time high-level national project director who focused on oversight and a full-time

Figure 2: Project's organizational structure



national project manager, a project admin/finance officer, 4 full time EE officers, and a full time building EE Specialist. Stakeholders' said on project's organizational structure as:

> *"The project's organizational structure underwent only minimal changes. Instead of appointing a chief technical advisor, which was not feasible due to the pandemic, the project opted to hire short-term thematic consultants. These arrangements were structured to ensure that a BEE technical specialist would oversee the technical aspects of the project as a whole."*

52. Interviews confirmed the suitability of the PMU structure, which mirrors the organizational setup of the FSM, which itself functions at the national and state levels. Coordination was maintained through regular remote meetings, either weekly or bi-weekly, a practice that was established during the pandemic and continues to be effective. Although meetings were not always conducted strictly within the specified interval, they were scheduled as called for. Given the substantial cost of round-trip airfare (exceeding $1000, for example, to get to Yap State) for face-to-face meetings, online meetings were a practical and logical alternative. The above instances illustrate the project's commitment to adaptive management during implementation and demonstrate that this approached helped the project realize its desired outputs and outcomes.

b. Managed human resources well

53. Human resource management (HRM) plays a pivotal role in the success of any project. Despite having adopting various effective approaches to handling human resources, the project encountered challenges with HRM right from its inception. According to the established modality, the project is responsible for hiring, a process that, in the case of this project, was complex and time-consuming. Processing contracts required multiple levels of clearance, including from the Department of Finance, Department of Justice, and ultimately the DoR&D, a process so prolonged that managing staff on a short-term basis was rendered impractical. The current project manager, admin/finance officer came on board in March 2021, a full four months after the project had commenced, and a technical expert was only effectively managed in April of 2022. Shortly afterward, EE officer of Pohnpei left. The other EE officers began their roles in November 2021 (Pohnpei), October 2020 (Yap), May 2022 (Kosrae), and May 2022 (Chuuk). Remarkably, all four EE officers, key personnel at the state level were recruited only between 12 and 17 months after the official project launch. Their absence significantly impeded the project's start, awareness-building, and stakeholder induction.

54. A building EE specialist was hired only in April 2022, after a six-month recruitment process. Needless to say, the lengthy absence of such expertise undermined the project's overall performance. Furthermore, the turnover among UNDP staff, project personnel, and government thematic staff resulted in the loss of institutional memory within the project. While physical handovers from outgoing staff to newcomers were practiced, the methodical transfer of skills and knowledge to mitigate coordination gaps arising from staff turnover was not systematically implemented. In addition, some staff members were not recruited as called for in the ProDoc, and there were deviations from the original staffing plan. While this divergence was in part attributable to the lack of qualified local human resources, the gap forced certain staff members to manage multiple tasks concurrently. The fact that they were able to provide evidence that the project effectively employed adaptive management during implementation to improve its results as much as was feasible (see Annex-8).

4.2.2 Actual stakeholder participation and partnership arrangements

55. There hasn't been significant alteration in stakeholder involvement and partnership arrangements. However, during interviews, project stakeholders noted that not all of these roles were consistently performed by the state utilities, partly because of the pandemic. The Ministry of Finance, though not originally planned, played a significant role in project implementation, and the project aimed to enhance its engagement by ensuring the timely management of financial resources. The project-defined variations in stakeholders' roles across different project phases underscored the PMU's adeptness in analyzing situations and redefining roles as necessary. Some stakeholders actively participated in baseline surveys and consultation workshops and meetings, while others assumed significant roles during the implementation and consolidation phases. Involvement in numerous review-and-reflection meetings and three PAB meetings helped to mobilize all relevant stakeholders to work collectively towards the project's objectives. Nonetheless, the project made minor adjustments to the stakeholder's role in participation and partnership arrangements in order to yield more favorable outcomes.

4.2.3 Project finance and co-finance

a. Project finance

56. The project's overall cost amounted to approximately US$ 5.3 million. The GEF contributed US$ 1.8 million (34%) from its Trust Fund, while the DoR&D provided US$ 3.4 million (64%), and the UNDP contributed US$ 50,000 (2%). Out of this total budget, the allocations for the first three years were US$ 1,220,235 (23%), US$ 2,498,400 (47%), and US$ 1,557,849 (30%), respectively. As of August 31, the project had expended 74.78% of the available funds. The expenses for outcomes 1, 2, 3, and 4 stood at more than 100%, 79.13%, 33.63%, and 53.09%, respectively, and corresponded with progress in the implementation of each component. As of August 2023, the project management had utilized approximately 76.60% of the planned funds. The TE consultant identified certain disparities between the planned and actual expenditures. The project has implemented robust financial controls, enabling it to make informed decisions regarding the budget and ensuring the timely allocation of funds for the successful execution of project deliverables.

Table 1: Planned budget vs. actual budget

Particular (major budget heading)	Planned budget (USD)	Actual expenditure (USD)	Percent	Reason for variation
Outcome 1	75,000.00	88,998.31	>100	1st year's CWP was only on outcome , 2 & PMC so we overspend on salary for PMU
Outcome 2	195,000.00	123,927.23	63.55	Some planned activities are not yet implemented
Outcome 3	1,200,000.00	946,313.75	78.85	Some planned activities are still pending
Outcome 4	144,985.00	87,070.73	46.26	Activities still pending
Project management cost	161,499.00	102,105.96	63.22	Some activities are still pending
Grand Total	1,776,484.00	1,328,386.00	74.78	Some activities are still pending

57. This table 1 revealed that as of Aug 31, the total financial delivery is 74.78%.

58. Under the NIM, the IPs are required to submit quarterly payment requests to the Treasury Department of the GoFSM. To receive the next instalment, it must expend 80% of the budget allocated for each quarter. If the entire budget is not utilized within six months, it must be returned. This provision has presented a challenge as it contradicts the existing regulations of FSM and, as a result, has led to additional delays. For instance, FSM policy mandates that 100% of the salaries for contracts with the national government lasting one year or longer must be committed. Partially because of these delays in implementation but primarily because a significant portion of procurement activities falls within this timeframe, the AWP for 2023 still has to a large funds by September 2023.

59. While the project's utilization of the budget was sluggish due to both internal and external challenges, as discussed in the effectiveness section below , it is noteworthy that no allegations of fund mishandling were reported. Each IP diligently adhered to its respective procurement policies for the acquisition and use of materials and services. One encouraging aspect of the project was its flexibility in reallocating funds to certain areas if there was a strong justification for that transfer. The project also implemented rigorous financial controls, a fact which is evident in several measures.

60. First, the project's delivery and budget balance report together provide a transparent overview of the expenditures and commitments for the current year. This process, initially generated through ATLAS, is now managed within the Quantum system. Second, the manual monitoring of project expenditures against budget categories was employed to gain a comprehensive understanding of financial progress and outstanding commitments. Last, the receipt of each successive quarterly tranche of GEF funds from UNDP was contingent upon having spent a minimum of 80% of the funds in the previous tranche. Despite these provisions, there were still delays in approving payments after bills and receipts were submitted.

61. Currently, there are three contractors involved in this project: (i) Ocean Climate Energy Advisors (OCEA), responsible for the design and installation of the EMRS; (ii) RJ Electrical and Refrigeration Services, overseeing the management of various goods such as hybrid solar ACs, inverter-type ACs and solar water heaters; and (iii) Steady Palms, in charge of managing inverter-type AC units for Pohnpei and Chuuk states. According to PMU staff, all three contractors have been performing admirably.

b. Project co-financing

62. The project successfully identified potential sources of co-financing and effectively capitalized on these opportunities. The fact that IPs, stakeholders, and PMU staff possess a clear comprehension of the nature of reported co-financing meant that they were able to materialize the committed in-kind, grant, and cash co-financing. They are also well-informed about the reasons behind disparities between expected and actual levels of co-financing. Approximately 11.2% of the total budget was originally planned to be sourced from the GoFSM as co-financing, including US$ 0.4 million (as in-kind support) earmarked for project implementation. . Project's budget (US$ 3.55 million) was allocated for various purposes, including (i) supporting energy audits and the implementation of selected energy-saving opportunities, (ii) conducting research on, designing, and implementing EE monitoring, reporting, and database systems and developing EE guidelines, (iii) promoting and applying new EE building technologies and products, (iv) documenting and disseminating the project's activities, (v) designing and executing capacity-building initiatives, and (vi) covering the expenses of managing demonstration projects. Another US$ 0.2 million was provided as in-kind support for project management, monitoring, evaluation, and coordination efforts.
This observation indicates that the project was well-planned to utilize co-financing, yet the execution of this plan was not as effective. This was mainly due to the absence of concrete mechanisms for tracking co-financing, such as defined procedures, processes, and tracking files/tools. The PMU staff disclosed that the project's budget had been reasonably allocated to the aforementioned activities.

Table 2: Co-financing (planned vs. actual status), as of August 31, 2023

Co-financing (type/source)	GEF financing (US$ m)		Government (US$ m)		Partner Agency (US$ m)		Total (US$ m)		Percent
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	
Grants/cash	3,100,000	2,011,639					3,100,000	2,011,639	91%
Loans/concessions									
In-kind support			400,000	200,000			400,000	200,000	50%
Other					50,000	0	50,000		0%
Total	3,100,000	2,011,639	400,000	200,000	50,000	0	3,550,000	2,211,639	
Percent		65%		50%		0%		62.2%	100%

63. The table 2 revealed that 65% achievements was made in GEF/UNDP financing, 50% in government side, and no data received from the partner agencies.

Table 3: Co-financing status (as of August 31, 2023)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Co-financing amount confirmed at CEO Endorsement/approval	Investment mobilized	Materialized co-financing
Recipient Government	DoR&D/Energy Division	Grants	450,000	450,000	Recurrent expenditure
Recipient Government	DoR&D/Energy Division	In- Kind	200,000	200,000	Recurrent expenditure
Recipient Government	DoR&D/Energy Division	Grants	600,000	600,000	Recurrent expenditure
Recipient Government	DoRD (EU ACSE Project)	Grants	300,000	43,000	Investment Mobilized
Recipient Government	DRD/State Governments and Utilities	Grants	600,000	600,000	Investment Mobilized
GEF Agency					
Recipient Government	State Hospitals	Grants	1,000,000	318,639.00	Investment mobilized
Total			3,500,000	2,211,639	62.2% achieved

64. The table 3 shows that a total of 62.2% con-financing is leveraged so far. Out of the total, 91% is grant whereas 9% is in kind.

65. The project, in addition to in-kind contributions, effectively secured co-financing from the World Bank to cover the expenses associated with hiring an energy advisor for the Energy Division. This grant also provided support for EE upgrades, including EE Genset systems, power management, and mini-grid systems for utilities. In addition, the collective commitments of state governments amounted to US$ 1.8 million, US$ 1.6 million in cash and US$ 0.2 million in in-kind co-financing. This co-financing was designated for various purposes, including (i) providing logistical support for audits, (ii) facilitating energy end-use monitoring, (iii)

supporting reporting and database development, and procuring EE equipment for the demonstration hospitals.

66. The project was able to secure co-financing from the World Bank, too. Because leveraging co-financing experienced some delays, the PMU raised the matter of identifying co-financing issues and implementing mitigation actions during its second meeting of January 2022. Similarly, at the third PAB meeting in May 2022, participants emphasized that state EE officers needed to explore other infrastructure projects with similar goals to complement the project demonstration buildings. According to the PIR for 2022, however, co-financing for activities other than housing the PMU was not made available. That said, during stakeholder interviews, evidence of co-financing was identified, including retrofitting the Chuuk and Yap State hospitals, the radio station in Yap, and the administration building in Yap.

67. Co-financing resources played a crucial role in realizing the project's objectives and outcomes. Evidence supporting this assertion includes confirmation emails received from co-financing sources. These emails provide comprehensive information, including the amounts of co-financing, the nature of the activities co-financed, project names, and relevant dates. While cash co-financing is relatively straightforward, the tracking of in-kind contributions was not meticulously documented throughout project implementation. The majority of co-financing was derived from recurrent expenses related to staff time, annual budgets, and the provision of office space for the PMU within DoR&D's office.

4.2.4 Monitoring & evaluation: design at entry (*), implementation (*), and overall assessment of M&E (*)

a. M&E measures and activities were built into the ProDoc

68. It's commendable that the ProDoc incorporated numerous M&E measures and activities to effectively oversee and report on progress in implementation and outcomes. This achievement was possible because the project was designed in accordance with UNDP and GEF standards and requirements.

69. After the project had secured approval, it organized an inception workshop during which activities were systematically categorized, roles and responsibilities of relevant stakeholders were defined, and indicative costs and timelines were established. The workshop yielded valuable insights to the development of the project's M&E plan. The project's scope of work included provisions and budgets for both a MTR and a TE. The MTR was commissioned two years into implementation but it experienced delays that limited the time available to implement the MTR's recommendations in a systematic manner.

70. Monitoring was rigorously implemented to gauge progress and identify bottlenecks and appropriately corresponding mitigation strategies. Given the project's slow progress, UNDP requested the PMU to develop an acceleration plan. That plan was presented at the May 2023 PAB meeting. As the project advanced, UNDP initiated weekly online meetings to bridge the remaining gaps, closely monitor progress, and ensure the timely implementation of measures to mitigate emerging challenges. Unless a comprehensive plan for the final three months, it is hard to meet the project's targets.

71. It was notable that the M&E system was devised and put into action with the aims of preventing redundancy, achieving the expected outcomes within the given timeframe, and keeping the project on course. Stakeholders expressed their appreciation of the M&E system, which proved instrumental in swiftly addressing emerging issues on the ground by formulating mitigation strategies to safeguard the project's results. The M&E-related concerns raised during the MTR were effectively addressed by strategically interpreting the results based on an assessment of the indicators. As mentioned above, the delay in conducting the MTR resulted in the project's having limited time to fully integrate the MTR's recommendations into a results-based M&E framework designed to enhance the outcomes.

72. Stakeholders in Yap shared that since the formal commencement of the project in December 2022, staff from UNDP's Pacific Office in Pohnpei and UNDP's MCO in Suva, Fiji, had made minimal visits to the Yap state. The organization of project activities did not follow the systematic approach (logical order) once used in part due to pandemic-induced travel restrictions and the logistical challenges of serving the widely dispersed FSM states. In principle, capacity-building initiatives (software support) were to be conducted before hardware support was provided as software preparations create the enabling environment the project needs to effectively implement structural supports (but it was not feasible in all cases). Evaluation on the role of UNDP Pacific Office, stakeholders during interview said:

"The deputy UNDP representative actively attended various meetings with government officials and engaged in discussions addressing challenges, thereby demonstrating the dedication of the UNDP North Pacific Office at all stages of project implementation."

73. To compensate for the delay in the project's start and the travel restrictions imposed upon it by the pandemic, the project adopted a pragmatic approach: it selected activities that were feasible and would be able to bridge gaps in the project's overall progress. The limited travel budget further reduced the number of M&E visits beyond the pandemic-induced limitations. Despite these internal and external challenges, the project managed to maintain the high quality of its work. The views of the stakeholders about the overall M&E mechanism as:

"Project-level M&E was conducted in adherence to UNDP requirements as outlined in the UNDP POPP and Evaluation Policy. In addition, mandatory M&E requirements specific to GEF were incorporated in alignment with the GEF M&E policy. The monitoring plan encompasses several key components, including (i) descriptions of monitoring indicators, (ii) identification of data sources, (iii) delineation of data collection methods, (iv) determination of the frequency of data collection, (v) assignment of responsibility for data collection, (vi) establishment of means of verification, and (vii) formulation of underlying assumptions. The total indicative budget allocated for meeting the GEF M&E requirements and the overall M&E budget was US$ 157,750, or 3% of the GEF budget. The operationalization of the M&E plan was facilitated by available policy mandates and budget resources. The UNDP MCO and Pacific Office team provided guidance and technical support for monitoring as needed.

b. PAB's close reviews and decision to expedite progress

74. At the highest echelon, the project's M&E was conducted by the members of the PAB. These monitoring visits generated invaluable guidance for the project. For instance, during the May 2022 PAB meeting, concerns regarding the project's sluggish progress and implementation delays were deliberated, an agenda which led to the formulation of mitigation strategies. It was also decided at that each meeting agenda include the minutes of prior meetings to serve as a means to assess the degree to which previously made decisions had been implemented. If it was discovered that any given decision had not been fully implemented, valid reasons would be identified and further action plans developed. Such re-visitation of previous decisions before making new ones appealed greatly to project stakeholders. During the second PAB meeting, held in January 2022, participants recognized that there was a need for M&E to gauge the project's progress in relation to its indicator targets. The PAB directed the PMU to review the results framework and compare project achievements against established baselines. It was also decided that if any given activity were complete and still had budget leftover, that budget could be reallocated to other budget lines. These decisions suggests how significant M&E was in ensuring the quality of the project's work.

c. Build the capacity of the PMU to engage in day-to day actions

75. The PMU is tasked with the daily oversight of project interventions. The 2022 PIR documents the progress the project had made against the indicators and targets outlined in the results framework during the period from the project's inception until June 2022. However, as previously noted, despite the project's ongoing efforts to ensure that there is sufficient follow-up, there was limited reporting on the attainment of results and progress towards meeting indicators. This limitation reduced the adoption of complementary activities and the mobilization of the sort of parallel co-financing that can enhance cost effectiveness.

d. Modify the gender action plan to mainstream gender issues in project actions

76. In conjunction with the M&E Plan, the project placed significant emphasis on a gender action plan, which it developed in more depth towards the end of 2022. For each output and outcome, this plan outlined specific activities and steps to enhance the project's responsiveness to gender considerations. An effort was made to provide comprehensive implementation details, including specific actions, sources of measurement, indicators, responsible agencies, and budget allocation. While the majority of the proposed actions involved the integration of gender considerations into the project's original activities, there were also several gender-specific activities that have not yet been put into operation. These activities will incur additional costs that were not accounted for in the 2023 AWP. The project revised the 2023 AWP to address implementation gaps. Project stakeholders, however, expressed concerns that this revised plan was overly ambitious as it envisions the execution of all proposed actions within one year, 2023.

77. The assessment of the project's comprehensive M&E status, encompassing its design, plans, implementation, and quality, considered several key facets, namely, (i) integration of M&E measures and activities into the ProDoc, (ii) thorough review and decision-making by the PAB to expedite progress, (iii) capacity-building efforts aimed at empowering the PMU for day-to-day activities, and (iv) adaptation of the gender action plan to effectively incorporate gender-related concerns into project

activities. Furthermore, the evaluation appraised the effectiveness of M&E in terms of compliance with the M&E standards established by PMU/FSM, UNDP and GEF. It also examined the utilization of M&E information to enhance project performance and responsiveness to evolving requirements. This involved the use of M&E data to update the ATLAS risk log and the UNDP gender marker, as well as improvements in procurement and logistics systems. After a thorough examination of all the evidence gathered, the overall analysis yields the following rating.

M&E design at entry: **5** (Satisfactory)
M&E plan implementation: **5** (Satisfactory)
Overall quality of M&E: **5** (Satisfactory)

4.2.5 UNDP implementation/oversight (*) and implementing partner execution (*), overall project implementation/execution (*), coordination, and operational issues

78. According to the NIM, the UNDP Country Office is responsible for various key functions as are outlined in the letter of agreement the project signed with the government of FSM. These responsibilities include financial and audit services; the recruitment of project personnel, including staff, consultants, and service providers; the procurement of goods and services; and oversight of project expenditures in alignment with approved project AWPs and budgets. PMU staff possesses extensive experience in project management and implementation oversight. UNDP effectively executed the MTR process in accordance with GEF requirements. The support provided to address the challenges posed by COVID-19 demonstrated an apt and adaptable response to significant implementation hurdles. It is worth noting that focusing further on risk management through the periodic update of the SESP would have been highly beneficial for addressing the dynamic nature of risk. Importantly, stakeholders did not raise any concerns regarding UNDP's implementation and oversight of the project during the TE consultations. About the SESP, stakeholder expressed:

> *"The SESP was updated, and, as called for in the newest plan, UNDP MCO has been monitoring the status of the waste management protocol for the disposal of hazardous and solid waste. While there is a detailed grievance redress mechanism in place, there is limited evidence that it aims to ensure compliance with the SESP through appropriate procedures for addressing project-related complaints and disputes."*

79. The project's IPs all implemented activities based on their capacities. Even so, delays in project work occurred due to general human resource management issues, particularly in Kosrae State. External factors such as the pandemic also contributed to project delays. However, the project's resilience enabled it to adapt to and address both internal and external challenges effectively, allowing for the achievement of overall project results through the development of and adherence to contingency plans. The creation and implementation of an "acceleration plan" further helped narrow the project's implementation gaps, as is outlined in the 2022 Annual PIR. While not all tasks have been completed and some barriers still exist, they are within the project's control. During TE consultations in Yap and Pohnpei states, stakeholders consistently expressed the view that, if it had not been for the pandemic, progress in and expenditure on the project would likely have aligned closely with the ProDoc's original plans. About the operationalization of MTR's recommendations, stakeholders during interview said:

> *"In response to recommendations from the MTR, the PMU devised and the PAB endorsed a six-month accelerated plan to build momentum in project activities. Given that major contracts for the procurement of EC&EE technologies have already been established in all four states and installation is in progress, it is likely that the project will achieve most of its targets before October."*

80. Following a comprehensive evaluation encompassing UNDP's implementation and oversight, the execution by its implementing partner, the overall implementation and execution of the project, as well as efforts to address operational challenges to enhance outcomes, the ratings were allocated as follows: (i) UNDP implementation and oversight garnered a rating of 5 (satisfactory), (ii) the execution by the implementing partner received a rating of 5 (satisfactory), and (iii) the overall implementation and execution of the project attained a rating of 5 (satisfactory).

4.2.6 Risk management, including social and environmental standards

81. The ProDoc has identified seven significant risks that underlie the project's outcomes (three classified as medium impact and probability and four as low). The initial risk, which pertains to the possibility of not achieving the overall project objective and project failure, has been diligently addressed by close monitoring by the project team. The team has also coordinated continuously with co-financiers regarding the implementation of their committed baseline projects and activities. As specified in the ProDoc, he DoR&D assumed leadership.

4.3 Project Results

4.3.1 Progress towards objective and expected outcomes (*)

82. Using the project's results framework, the TE consultant conducted a thorough evaluation of the project's advancement with respect to the set indicators and targets. The project initially outlined 70 activities spread across 16 outputs, with four outputs allocated to each component or outcome. These were to be accomplished within a 36-month timeframe. However, due to initial delays in activity implementation and the substantial postponement in attaining most targets throughout 2021 and the first half of 2022, the project was forced to adopt corrective measures. Even so, the delays did have a discernible impact on the project's overall progress toward its ultimate goal and objectives.

a. Achievement of the project's goal

83. The primary aim of the project was to enhance energy efficiency in the country's building sector while concurrently reducing the total volume of GHG emissions. To gauge progress towards this objective, the project established two key performance indicators: (i) specific energy consumption in the building sector (measured in kWh/m^2/yr) and (ii) the cumulative reduction in GHG emissions from the building sector (measured in tons of CO_2e). The project adopted a continuous monitoring process to assess its achievement of the annual targets for each key indicator and used PIRs to report on that progress.

Description of indicator	Baseline level	Mid-term target level	Aug 31, 2023	End-of-project target level
Specific energy consumption in the buildings sector, kWh/m^2/yr.	150	145	144	140
Cumulative incremental GHG emission reduction from the building sector, tons CO_2e	0	2,160	3500	3,974

Source: Project data, Aug 31

84. The current energy consumption per square meter per year in the buildings sector stands at 144 kWh/m^2/yr, while the end-of-project goal is to achieve a target of 140 kWh/m^2/yr. This reduction was made achievable through the widespread adoption of EE and environmentally friendly equipment such as cooling systems, solar water heaters, LED lighting, and similar technologies. Consequently, there has been a gradual decrease in energy consumption within the buildings sector over time.

85. The total cumulative reduction in GHG emissions from the building sector, measured in tons of CO_2e, currently stands at 3500, while the end-of-project objective was 3974. This advancement has been made possible through collaborative investments from various development partners such as the WB, ADB, EU, and JICA. These investments have been directed towards low-carbon power generation for all utility authorities and the promotion of renewable and sustainable energy sources. These combined efforts, in conjunction with the project's initiatives, have significantly contributed to the reduction of GHG emissions (see Annex-4 for details).

b. Achievement of the project's objectives

Description of indicator	Baseline level	Mid-term target level	Aug 31, 2023	End-of-project target level
Cumulative incremental fossil fuel savings due to sustainable energy efficiency and low-carbon interventions implemented, toe diesel	0	566.4	950	1,042.1
No. of new jobs created in the application of EC&EE technologies and techniques in the country's building sector	0	4	12	4

Source: Project data, Aug 31

86. The cumulative incremental savings in fossil fuels resulting from the implementation of sustainable EE and low-carbon initiatives, measured in tons of oil equivalent (toe) diesel, currently stands at 950. The project's end-of-term target is set at 1042.1 toe diesel. Thanks to the support and investment from other development partners such as the WB, ADB, EU, and JICA in low-carbon power generation for utility authorities, the project's goals have already been met well before the expected timeline.

87. The application of EC&EE technologies and techniques in the country's building sector has resulted in the creation of 12 new jobs, surpassing the initial target of 4 jobs. This achievement is attributed to the awarding

of all procurement and installation contracts for the equipment to five local contractors. Each of these contractors has contributed to job creation by hiring two personnel each to carry out the required work. Additionally, there has been job creation on the supply side of EC&EE equipment as well (see Annex-4 for details).

c. Achievement of project's anticipated outcomes

Outcome 1: Enforcement of policies and guidance on the energy efficient and energy conserving design, retrofit, operation and maintenance of public sector buildings

Description of indicator	Baseline level	Mid-term target level	Aug 31, 2023	End-of-project target level
Number of approved and followed building EC&EE policies and associated guidance and implementing rules and regulations.	0	3	0	3
Number of public-sector buildings that are compliant with energy standards stipulated in building EC&EE policies and associated guidance and implementing rules and regulations.	0	4	7	14

Source: Project data, Aug 31

88. As of August 31, the project has formulated three policies, regulations, and guidelines related to EC&EE and is currently progressing towards obtaining final approval from Congress.

89. Currently, there are seven public-sector buildings that adhere to the energy standards specified in the building EC&EE policies, along with the corresponding guidance and implementing rules and regulations. However, the project's ultimate target by the end of its term is to have 14 such compliant buildings. For instance, all the structures within the College of Micronesia are in accordance with the standards outlined in the draft EC&EE policies and the accompanying guidance and regulations (see Annex-4 for details).

Outcome 2: Enhanced management and monitoring of the energy performance of public-sector buildings

Description of indicator	Baseline level	Mid-term target level	Aug 31, 2023	End-of-project target level
Review buildings under the preliminary energy audit system to discover the most comprehensive and best commercially available EE equipment, conduct EE demonstration and replicate renovations.	0	12	8[15]	30
According to the EMRS, number of state/national level quarterly reports on the energy use of public-sector buildings from state power utilities and consumption reports	0	4	0	4
Number of building/sectoral level ISO50001 style annual reports submitted to the FSM Energy Group	0	8	0	14

Source: Project data, Aug 31

90. A total of 14 buildings have undergone evaluation within the established and operational energy audit system to identify the most comprehensive and commercially superior EE equipment. It's worth noting that the project's original target was to review 30 buildings by its conclusion.

91. At present, there is no Energy Management and Reporting System (EMRS) report accessible. However, the project anticipates having one by November 2023, as the EMRS equipment is currently installed in the buildings.

92. As of August 31, there is no available EMRS report. However, the project anticipates having these reports by November 2023, as the EMRS equipment is presently installed in the buildings. Once the EMRS is operational, it will provide data at both the building and sectoral levels in an ISO50001 style, facilitating the preparation and submission of annual reports to the FSM Energy Group (see Annex-4 for details).

[15] The installation of EMRS has been concluded in 8 buildings within the Pohnpei state. A similar process is currently underway in the Chuuk, Yap, and Kosrae states, with an anticipated completion date of November 14, 2023. The total count of buildings for this installation is 30.

Outcome 3: Increased understanding of the viability and benefits of applying EC&EE technologies to public-sector buildings and facilities

Description of indicator	Baseline level	Mid-term target level	Aug 31, 2023	End-of-project target level
Number of public-sector building EE technology application projects designed and financed for implementation as demonstrations.	0	8	14[16]	14
Number of EC&EE projects implemented in public-sector buildings influenced by the results and outcomes of the implemented demonstration of applying technology	0	4	7	16

Source: Project data, Aug 31

93. The number of EE technology application projects designed and funded for implementation as demonstrations in public-sector buildings currently stands at 14, which matches the end-of-project target of 14 as well. Furthermore, there is an expectation of additional sub-projects in the pipeline, thanks to the Chuuk state government's investment in EC&EE equipment at the state hospital before the project's installation at the same facility.

94. The number of EC&EE projects that have been carried out in public-sector buildings, influenced by the results and outcomes of the technology application demonstrations, currently stands at 7. This falls short of the initial target of 16 projects. Notably, during the project's implementation, 7 buildings within the College of Micronesia integrated EC&EE technology. Additionally, other buildings, including the Micronesia Conservation Trust, Pohnpei Public Library, Pohnpei Agricultural Services, Pohnpei Women's Council Resource Center, Gonzaga Catholic Mission Hall, and the High School Building for the Central Union for Young Adults, underwent retrofitting with EE and environmentally friendly technologies (see Annex-4 for details).

Outcome 4: Enhanced awareness and knowledge on the cost-effective application of EC&EE technologies to public-sector buildings

Description of indicator	Baseline level	Mid-term target level	Aug 31, 2023	End-of-project target level
Number of trained public-sector building personnel that can ably manage to design, implement and evaluate buildings that apply EC&EE technologies.	0	6	4	10
Number of public-sector buildings with established energy management programs and implemented EC&EE projects.	0	8	8	32

Source: Project data, Aug 31

95. The current number of trained public-sector building personnel capable of proficiently designing, implementing, and evaluating buildings that incorporate EC&EE technologies is 4, falling short of the project's end-of-term target of 10. However, it's noteworthy that as of now, four individuals within the public sector have acquired the skills to manage the design and implementation of EC&EE technologies. There are also expectations for additional personnel to receive training by October 2023.

96. The current count of public-sector buildings that have initiated energy management programs and executed EC&EE projects stands at 8, which falls short of the project's original target of 32. As of the current status, 8 public buildings have successfully established EMRS (Energy Management and Reporting Systems), and it is anticipated that additional buildings will complete this process by the third week of September (see Annex-4 for details).

4.3.2 Relevance (*)

97. The project aligns with FSM's national strategies and plans due to the strong correlation between its outcomes and outputs. This alignment is particularly evident in the context of national priorities. FSM's commitment, as outlined in its NDC report, involves achieving an unconditional 28% reduction in GHG emissions from 2000

[16] By the conclusion of the project, the anticipated number of buildings is expected to exceed 14, owing to the recent purchase and installation of EE ACs by the Chuuk state hospital. The surplus ACs are scheduled to be installed in other public buildings according to the PEA's recommendations.

levels by 2025. This reduction is to be achieved by implementing energy EC&EE measures that will in turn decrease annual power generation.

98. Recognizing that one of FSM's development approaches is to encourage public-private partnerships (PPP) aimed at enhancing the renewable energy sector, the project assumed a structure carefully calculated to contribute to the establishment of institutional frameworks and arrangements for EC&EE within both public and private buildings. The project effectively tackled financial obstacles and promoted capacity development through a series of actions and strategies galvanized by stakeholder input. Two notable ideas introduced by local and national stakeholders was that there was a "lack of comprehension regarding the design and implementation of EC&EE projects" and that the challenge of "overcoming financial barriers" could be accomplished by adopting a PPP approach.

99. The foundation of this project is in harmony with pertinent GEF strategic goals and outcomes structure, notably CCM 1 Program 1. The PIF appropriately highlighted the factors driving global environmental deterioration, concerns regarding sustainability, market alterations and expansion, and novel approaches. The project is linked to and in line with UNDP priorities and strategies for FSM. The project explored various avenues aimed at increasing investments in introducing EC&EE practices to public buildings. The project also embraced a PPP model in alignment with FSM's renewable energy sector policy. Recognizing the substantial potential of the private sector in realizing sustainable renewable energy initiatives, the project strategically engaged private entities (see Annex-10).

100. The assessment of the project's relevance took into consideration several key factors, including, (i) alignment of its objectives with the priorities of the Government of FSM and States, (ii) compatibility of its objectives with FSM's development priorities and its broader environment, (iii) the project's origin in the ideas of States and national stakeholders, with their active involvement in its development, (iv) alignment of its objectives with GEF strategic priorities, especially GEF 5, (v) conformity with UNDP priorities and strategies for FSM, and (vi) the project's contribution to the implementation of FSM's policies in the renewable energy sector. Based on these criteria, the overall rating for relevance is 5, indicating a satisfactory level of alignment and relevance.

4.3.3 Effectiveness (*)

a. Key factors contributing to project success (achievement) or underachievement

101. Government stakeholders identified several key factors that contributed to the project's success, including (i) the willingness of national and state governments as well as building managers to collaborate through effective coordination; (ii) the provision of tax waivers on equipment and in-kind contributions such as workspace and office supplies; (iii) contributions of co-financing assistance as per the project plan: (iv) the enthusiastic support of development partners like the WB, ADB, EU, JICA, and others in creating an enabling environment; (v) the management of essential human resources, including a building EE and environmental and social specialists, and EMRS consultants, to bridge knowledge gaps; (vi) strong leadership from the IPs and genuine support from UNDP and PAB; and (vii) a robust PMU which carries out daily operations effectively. Thus far, the project implementation has not encountered significant socio-economic, political, cultural, or environmental risks other than the impacts of the pandemic. According to project stakeholders, the key factors contributing to underachievement include (a) disruptions caused by COVID-19 lockdowns, (b) insufficient availability of qualified human resources within the country, (c) a lack of skilled labor at the national/state level, (d) limited resources on the islands where the project is being implemented, and (e) delays in the tendering and procurement processes. The pandemic prevented experts and project personnel from traveling to carry out PEAs and engage in face-to-face discussions with stakeholders. In addition, there was a shortage of qualified candidates to fill critical roles and conduct assessments as well as a limited number of vendors to supply required products and services. The geographic remoteness of the targeted areas complicated the purchase, shipping, and receipt of equipment.

102. Despite these challenges, careful assessment and analysis revealed that the planned inputs and strategies were realistic, appropriate, and sufficient for achieving the project's intended results and outcomes. That said, the project faced changes and disruptions from the beginning, including the pandemic and inflated prices for EC&EE equipment and fixtures in the global market. Price rises in the global market in turn affected local markets, resulting in price increases for some materials. These price hikes posed challenges for the tendering and procurement processes. However, the project successfully addressed these challenges by meeting vendors and contractors, revising cost estimates some bids to avoid cancellations, and re-advertising some bids to accommodate the concerns of vendors and contractors. Despite these difficulties, the project persevered and ultimately achieved its overall goals and objectives.

103. Managed human resources by clearly defining roles and responsibilities: The project effectively organized human resources and short-term consultants by outlining distinct roles and responsibilities through ToRs. In particular, the inclusion of an ESIA and BEE specialist on the team significantly accelerated progress in activities under components 1, 2, and 3. In additional, the recruitment of a technical advisor to focus on policies and regulations is anticipated to make a notable contribution, particularly concerning the policy-related aspects of components 1 and 2. Notably, to mitigate potential risks stemming from delays in human resource recruitment, the PMU/ IPs promptly initiated requests for services to facilitate timely recruitment. The project's stakeholders recognized and appreciated the value of this strategic approach to human resource management.

104. Developed a detailed work plan and ensured monitoring was regular: The project contributed to the formulation of a comprehensive work plan and a well-defined timeline, thereby clearly structuring the implementation of the project's envisioned undertakings in real-world conditions. The PMU/IP actively monitored and evaluated activities, ensuring the successful attainment of all project components at a high standard of quality, and coordinated such efforts with UNDP to enhance synergy. The project held several monitoring visits with UNDP MCO and UNDP Pacific Office, all of which provided valuable insights into how to go about promoting the project's holistic advancement and devising strategies to address gaps.

105. Used online platforms for meetings and revisiting project activities: In response to the setbacks triggered by the COVID-19 pandemic, a phenomenon which substantially hindered operations, the PMU/IP leveraged online platforms like Zoom to orchestrate meetings, evaluate progress in activities, review and adapt the work plan as required, and extend essential assistance for executing project endeavors. Once travel restrictions had been lifted and inter-island travel reinstated, project operations regained momentum. Preliminary energy audits were initiated and procurement procedures progressed seamlessly. Stakeholders during interview also expressed that *"Pandemic-related travel restrictions prevented energy audits from being conducted as originally planned. Once inter-island travel reopened, however, preliminary energy audits were carried out, and procurement processes resumed. Border controls only lifted after mid-2022, and even then regular flights to FSM states were not fully restored. Travel restrictions to certain states persisted following the onset of the first community outbreak of COVID in FSM in the third quarter of 2022."*

106. Increased number of PABs and held fortnightly meeting: In order to enhance the structured execution of the project, the project decided to increase the frequency with which the PAB met. This adjustment aimed to ensure that guidance was provided timely and that both emerging and lingering issues were resolved promptly. Departing from the previous biannual schedule, the project began to hold quarterly PAB meetings. This shift enabled the project to address challenges efficiently, expedite project implementation, and exercise stringent oversight over project quality. To illustrate, the PAB meeting resoled to ask UNDP for assistance in procuring EE equipment and fixtures to overcome persistent procurement delays originating with the project.

107. Enlarged the role of UNDP's Pacific office: The UNDP Pacific Office helped arrange PAB meetings and draft TORs designed to provide assurance of activities would be implemented on time and also furnished technical insight to facilitate the seamless execution of project activities. In addition, the UNDP Pacific Office extended managerial backing to the procurement and financial aspects of the project, thereby ensuring the project adhered to its policies and designated timelines. Moreover, the UNDP Pacific Office assumed a guiding role in risk management within the PMU and contributed valuable inputs to the energy audit and feasibility study reports to ensure their technical soundness.

108. Modified project implementation plan: In order to expedite the execution of planned tasks, the project streamlined the processes for procuring all essential resources, such as equipment for demonstration and international consultants. After encountering implementation delays and feeling a need to better coordinate activities carried out by project partners, the PMU revisited the project implementation plan to prioritize pivotal tasks, especially those that had experienced delays in their commencement, within each of the project's three components.

109. Revised implementation and monitoring/tracking plans: The project modified its monitoring and tracking strategy to align with the updated implementation plan and the project's logical framework. Both foundational and incidental activities were considered. The adapted monitoring approach facilitated the observation of outcome-level indicators and the advancement of each project activity. A distinct monitoring plan was formulated and executed for the project's demonstrations in order to evaluate the energy and

environmental effectiveness of each. Factors such as energy savings and avoidance and the associated reductions in greenhouse gas emissions were quantified, as were the tangible economic outcomes of each demonstration. This new monitoring framework allowed the project to compute how much co-financing originated from each demonstration site. The monitoring plan designed for the demonstrations was deliberated thoroughly before securing approval from UNDP Country Office/NCE and endorsement from the PAB.

110. Reminded PMU to monitor and report/document the results of all co-financed/baseline activities: Since the project lacked comprehensive co-financing data, the PMU was entrusted with responsibility for monitoring, documenting, and reporting the outcomes of all of the project's co-financed and baseline activities, including the amounts of committed and secured co-financing. The PMU was also assigned the tasks of evaluating the project's performance in alignment with the project's logical framework and facilitating the execution of targeted research for each outcome indicator. Because Year 1 targets were not attained, the PMU was directed to expedite the implementation of the postponed activities and those designated for realization during the reporting period of the Project Implementation Review (PIR) in 2023. This approach was instrumental in generating the requisite data and information needed to gauge the level of achievement for each outcome indicator. To maintain UNDP's oversight of project implementation, the PMU is advised to continue its regular coordination calls with UNDP PO. In addition, consistent coordination with the regional technical advisor (RTA) is recommended to address implementation challenges and to ensure the vigilant monitoring of progress in both the implementation of planned projects and the assessment of results.

111. Practice good coordination and collaboration with other agencies: In addition to the designated agencies outlined in the ProDoc, the project successfully harnessed co-financing resources from the World Bank. A grant was allocated to the DoR&D to cover the expenditures associated with an energy advisor for the Energy Division, who concurrently serves as the chief technical advisor for the project. The grant is also being allocated to enhance energy efficiency through various avenues, including the implementation of EE power generation systems, power management control mechanisms, and mini-grid systems, all of which serve as retrofits or upgrades designed to enhance EE across utilities. Memoranda of understanding (MoUs) committing to co-financing initiatives were signed with three of the states. The specific buildings under consideration are the State Hospital of Chuuk, Department of Education buildings in Kosrae, and retrofits within Yap State.

f. Key factors contributing to project underachievement

112. Delays in human resource management: The recruitment process for the subject matter experts, such as the BEE and Chief Technical Advisor (CTA) were delayed due to the scarcity of suitably qualified candidates, particularly national technical experts. However, with assistance from UNDP, a technical expert specializing in EC&EE was secured and much progress in policies, regulations, and guidance has been made.

113. Pandemic-induced impacts on the project's pace of implementation: The project's progress was substantially impeded by the pandemic, which caused widespread delays in government and agency operations due to the implementation of emergency plans aimed to prevent the spread of COVID-19 and ensure social distancing was practiced in government offices. As a result, both the implementation of project activities and the recruitment of technical experts encountered significant obstacles and were subject to considerable delays. Travel restrictions imposed during the pandemic further hampered the continuity of project activities, resulting in a notable slowdown in their pace of implementation. The overall impact of the pandemic was an estimated 16 months of disruption.

114. A slow response from national and state government as well as other relevant agencies: Delays in activities arose from the sluggish response of national and state governments as well as other involved agencies. These agencies struggled to align with commitments established during project design and preparation as the administrative framework was relatively new. Co-financing MoUs encountered difficulties, too. Indeed, only the DoR&D confirmed its commitment. This predicament stemmed largely from the inadequacy of communications between the project team and state-level authorities. Furthermore, the project encountered limitations in effectively introducing relevant stakeholders and staff to the project's objectives. A deficiency in proper induction contributed to a lack of mutual understanding among implementing agencies during the project's initial stages (see Annex-11).

115. The assessment of the project's effectiveness took into account the several criteria, including (i) the degree to which project objectives were met, (ii) the critical factors that either contributed to the project's success (achievement) or hindered it (underachievement), (iii) the significant risks that posed a threat to the attainment

of project objectives and global environmental benefits, and (iv) the key assumptions and impact drivers that were relevant to achieving global environmental benefits. While it is worth noting that the project still has several targets to meet at the outcome level (despite many positive developments), its overall rating is **4**, indicating a **moderately satisfactory** level of **effectiveness**.

4.3.4 Efficiency (*)

a. Project's level of cost effectiveness

116. In general, the project activities were economically efficient. During the evaluation consultation, no project stakeholders raised any concern about budgetary issues and nobody said that budget had negatively impacted the project's outcomes. The project strove diligently to utilize its resources in a cost-effective manner. For example, as is the case in other states, the project in Yap made efficient use of government-owned property for equipment and material storage, thus reducing storage costs by a substantial amount. About the cost effectives and time efficient approach, stakeholder reflected:

> *"The project employed a cost-effective and time-efficient approach. As a result, it decided to procure energy equipment from Guam rather than the Philippines to save money. Initially, DoR&D planned to source energy equipment valued at US$ 240,000 from the Philippines, but further analysis and market research made it clear that Guam could provide the same equipment more cheaply and quickly. In the end, however, DoR&D did not procure the equipment from Guam as it was not possible to manage the equipment and fixtures on time."*

117. Furthermore, the project successfully secured waivers for import taxes at both the national and the state levels. The resulting savings invested in project activities. The project followed the NIM and ensured that it followed government processes and protocols for procuring goods, equipment, and services to the letter.

118. To date, financial and human resources have been utilized judiciously and in accordance with the plan. Project resources were not only allocated but also utilized for demonstration purposes. Expenditures across all four project components were managed satisfactorily and in line with national and international standards. As of August 31, 2023, 65% achievements was made in GEF/UNDP financing, 50% in government side, and no data received from the partner agencies. The overall co-financing as of August 31 is 62.2%

119. This achievement was attributable to the PMU's efficient acceleration of the implementation pace to achieve its outcomes and still stay within the budget. The majority of expenditures were allocated to contractual services for EC&EE retrofitting in public buildings and the remainder went to local consultants, vendors, contractors, individuals, and miscellaneous office-related expenses.

120. The project demonstrated that fund allocations were appropriate for and directly relevant to the successful implementation of the awarded work. This success was bolstered by robust financial controls, as is evidenced by detailed project budget reports, all of which are readily available. Thorough reviews of these reports confirm that the project's expenditures on activities aligned closely with the plans outlined in the ProDoc and were approved by the PAB. In short, the utilization of the GEF grant thus far has been cost-effective and had resulted in good outcomes.

b. Expenditures in line with international standards and norms

121. The project consistently upheld international standards and norms, as demonstrated through its compliance with the Harmonized Approach to Cash Transfers (HACT) micro assessment, NIM audits, and periodic spot checks conducted under the NIM framework. About the HACT and its operationalization, project's stakeholders during interview said:

> *"To ensure the quality of monitoring, various tools such as HACT, obligatory spot checks, project monitoring against the GAP framework, and a review of project indicators were employed. However, strategic monitoring visits, which typically involve being physically present at project sites, were significantly impeded by the pandemic. Consequently, the monitoring plan was not fully realized. Harmonizing FSM's policy requirements with UNDP's HACT policy was challenging, particularly regarding the management of financial flows. Several issues arose concerning the alignment of FSM policy requirements with UNDP's quarterly funding disbursement, especially in the context of human resources. While the management of procurement is somewhat less complex, it nonetheless necessitates timely action to prevent funds from being held beyond three months. To expedite project activities and maintain continuous progress, GoFSM is also contemplating the use of its own funds in situations where it is deemed necessary. However, this approach comes with the condition that UNDP release reimbursements to GoFSM promptly. Committing funds for the duration of contracts, especially staff contracts, was a challenge. A similar challenge arises while securing funds for supplies*

and goods under FSM policy, as funds must be in place before the procurement process can commence. If the procurement process extends beyond three or six months, it presents reporting challenges for both parties."

122. The most recent NIM audit, revealed no issues that required corrective action. The fact that all services were procured through a competitive bidding process underscores the project's commitment to transparency and accountability. Contracts for the supply and installation of equipment by local vendors adhered to competitive standards, and international consultants delivered services that met or exceeded international norms. These practices confirm the project's record-keeping was meticulous and its financial management systematic. All expenditures aligning seamlessly with international standards and norms.

c. Project's approach to implementation efficiently delivered the planned project results

123. Overall, the project's implementation approach was effective in achieving the project's intended outcomes within the established timeframe in close collaboration with all relevant stakeholders. A comprehensive examination the details of AWPs revealed that the project had played a pivotal role in shaping the implementation strategy to meet the originally planned results. This success can be attributed to the project's innovative and adaptable approach, manifested particularly through the development and execution of "acceleration plans." The meticulous execution of these plans proved invaluable in addressing programmatic gaps caused by various internal challenges and external factors.

124. However, it is important to acknowledge that the project is not without its challenges and areas for improvement. Stakeholders who participated in the evaluation consultations opined that the project could benefit from greater involvement by relevant stakeholders, starting right from the conceptualization and design phases and extending into the subsequent stage of project implementation. Such a comprehensively inclusive approach could result in even more substantial results. A thorough orientation for relevant stakeholders and project staff could also enhance the overall efficiency of project activities. In addition, the proper documentation of stakeholder commitments could help the project secure additional co-financing opportunities, facilitating programmatic synergy. It is important to note that certain factors beyond the project's control, such as the pandemic-related lockdowns and limited flight availability even after borders reopened, significantly undermined the efficiency of project activities. As discussed in previous sections, the project experienced significant delays during its initial years. In fact, for 4 months the project lacked both a project manager and a financial and administrative officer.

125. Regarding project design, the ProDoc outlined a typical UNDP/GEF project management structure, a structure that the project adhered to throughout the project implementation period. This management structure was entirely suitable for ensuring effective project execution. Standard UNDP/GEF monitoring and evaluation systems were also applied during the project's implementation. Notably, no extension requests were made for the project, reflecting the project management's confidence in its ability to meet its objectives within the established timeframe.

126. A positive aspect worth highlighting is the minimal turnover among project personnel and PAB members. Indeed, only one change PAB member, and that only for a brief three months, occurred in Yap. The UNDP Pacific Office played a pivotal role in overseeing and monitoring the project's progress and providing essential technical support to ensure that the project would be able to continue working towards its remaining targets without compromising the quality of its efforts.

d. Delays in project implementation and their effect on cost effectiveness

127. The delays in project implementation significantly hindered the project's cost-effectiveness multiplier effects. For instance, post-pandemic shipping and travel costs surged the initial cost compared to the baseline years, which encompassed the end of 2020 and the beginning of 2021. Delays lasting approximately 19 months meant that there was little room to engage in coordinated efforts with other UN agencies, bilateral and multilateral organizations, or civil society groups for planning and executing project activities on a cost-sharing basis due to the sense of urgency stemming from the need to catch up and achieve the initially delayed project targets. Despite the project's extensive scope, it had a tight timeframe that prevented the full realization of its potential, representing a missed opportunity. Furthermore, the delays had implications for equipment procurement, as global price hikes resulting from the pandemic, along with increases in shipping and transportation costs, increased procurement expenses.

128. During the project's initial years (2020-2021), slow implementation was primarily attributed to a shortage of local human resources and the constraints posed by COVID-19 travel restrictions. This slowness did not,

however, compromise the project's cost effectiveness as procurement activities were limited during this period. Once the project had successfully hired suitable human resources (both internally and externally) with support from UNDP, implementation gained significant momentum.

e. Contribution of cash and in-kind co-financing to project implementation

129. The project successfully mobilized both cash and in-kind co-financing from the planned stakeholders to use for its implementation. As of August 31, 2023, 65% achievements was made in GEF/UNDP financing, 50% in government side, and no data received from the partner agencies. 62.2% con-financing is leveraged so far. Out of the total, 91% is grant whereas 9% is in kind. However, apart from letter of DoR&D, however, aside from the letter from the DoR&D, no supporting documentation for co-financing has been received. Although there was strong initial support for the project, as evidenced by numerous co-financing letters and expressions of commitment, project ownership gradually waned due to shifts in policies and priorities among some key stakeholders. Even so, the commitment of the state governments remained steadfast.

130. For instance, in Yap, the state hospital made significant contributions, including the purchase of a new central cooling unit for US$ 205,764 the allocation of US$1,078 to replace exterior metal halide lamps with more energy-efficient exterior light-emitting diodes (LED) lamps, and the allocation of US$3,500 for the purchase of exterior solar lamps to enhance lighting around the hospital premises. Similarly, the Office of Administrative Services in Yap State provided US$1,788 to support the acquisition of electrical accessories, wiring, and construction materials, facilitating the conversion of many 110-volt systems to 220-volt systems in preparation for AC installation. A similar level of commitment was also reported in Chuuk State.

Box 1: Evidence of cost-sharing mechanisms with other agencies in Yap State

131. To the best of its ability, the project successfully established cost-sharing arrangements with relevant agencies. For instance, in Yap, while carrying out Activity 3.2.1 at Yap Hospital, 60% of the total expenses related to the acquisition of a new central cooling unit and solar lighting for the exterior area were shared, and the Hospital Maintenance Division was highly cooperative in facilitating access to and providing information for data collection efforts.

132. During the implementation of Activity 3.2.1 at the Yap administration building, 30% of the costs involved providing workspace for the EE officer and office equipment. The EE officer was granted unrestricted access to office use for assessment and implementation purposes.

133. Similarly, for the same activity at Yap Radio Station, 10% of the expenses to repair the AM transmitter and implement solar AC units to reduce power consumption in the AM transmitter room were covered by the station. The radio station displayed excellent cooperation with the project and granted unlimited access throughout the EC&EE installation process.

134. Regarding in-kind contributions, the project received valuable support in various forms, including import tax waivers, storage space for shipping containers and AC units, office workspace, office supplies and equipment, as well as cooperation in prioritizing project activities and coordinating the use of equipment like forklifts for container offloading and goods transportation, among other forms of assistance. Notably, among numerous contributions, the renovation of public buildings met co-financing requirements.

135. Stakeholders recognized the significance of these in-kind co-financing contributions, which proved to be instrumental in ensuring the project's success. The contributions of the DoR&D, the primary IP working in conjunction with other relevant departments to support project implementation, were particularly significant. In addition, each state government made cash contributions in accordance with the project plan. If the project had been able to utilize its initial 18 months more effectively, however, it could have leveraged additional resources in the form of cash, materials, and in-kind support. The delays, then, represent a missed opportunity for the project.

f. Project's success in leveraging additional resources from different agencies

136. Overall, the project was successful in securing additional resources from various agencies, thanks to its strategic approach of seeking additional support from relevant organizations to foster programmatic synergy. As a result, the project was able to generate some co-financing. For example, the assistance provided by the SPC played a pivotal role in conducting energy audits. It was noted that Yap State committed to financing EC&EE retrofitting after being inspired by preliminary results that indicated a reduction in electricity tariffs. Furthermore, financial support from other donors such as the World Bank, Asian Development Bank, European Union-SPC, and Japan International Cooperation Agency contributed to the energy sector in the

FSM and had direct and indirect impacts on the overall implementation of the project. About the involvement of SPC for training, PMU staff during interview reflected:

> *"The PMU engaged in negotiations with regional partners such as the Secretariat of the Pacific Community (SPC) to jointly organize training and workshops for the management, design, implementation, and evaluation of EC&EE application projects. However, this collaboration was never occurred as it was deemed that the project's remaining timeframe was too short to complete the necessary administrative work and formalize the required contractual agreements."*

137. Based on these six parameters, the assessment of efficiency was conducted. These parameters encompassed, i.e. (a) the project's level of cost-effectiveness during implementation, (b) expenditures that adhere to international standards and norms for record-keeping, (c) the project's efficient implementation approach in delivering the planned results, (d) timeliness in project implementation and its impact on cost-effectiveness, (e) the contribution of cash and in-kind co-financing to project implementation, and (f) the project's strategy for leveraging additional resources from various agencies. Although the project's delivery rate currently stands at **74.78%** (representing significant progress compared to the MTR and the second PIR, which was as of June 2023), and despite efforts to secure co-financing falling short of the initial plan, the overall **efficiency** rating is **4**, indicating a **moderately satisfactory** level.

4.3.5 Overall Outcome (*)

138. The current energy consumption per square meter per year in the buildings sector stands at 144 kWh/m^2/yr, while the end-of-project goal is to achieve a target of 140 kWh/m^2/yr. The total cumulative reduction in GHG emissions from the building sector, measured in tons of CO_2e, currently stands at 3500, while the end-of-project objective was 3974.

139. The cumulative incremental savings in fossil fuels resulting from the implementation of sustainable EE and low-carbon initiatives, measured in tons of oil equivalent (toe) diesel, currently stands at 950. The project's end-of-term target is set at 1042.1 toe diesel. The application of EC&EE technologies and techniques in the country's building sector has resulted in the creation of 12 new jobs, surpassing the initial target of 4 jobs.

140. As of August 31, the project has formulated three policies, regulations, and guidelines related to EC&EE and is currently progressing towards obtaining final approval from Congress. Currently, there are seven public-sector buildings that adhere to the energy standards specified in the building EC&EE policies, along with the corresponding guidance and implementing rules and regulations. However, the project's ultimate target by the end of its term is to have 14 such compliant buildings.

141. A total of 14 buildings have undergone evaluation within the established and operational energy audit system to identify the most comprehensive and commercially superior EE equipment. At present, there is no Energy Management and Reporting System (EMRS) report accessible. Once the EMRS is operational, it will provide data at both the building and sectoral levels in an ISO50001 style, facilitating the preparation and submission of annual reports to the FSM Energy Group

142. The number of EE technology application projects designed and funded for implementation as demonstrations in public-sector buildings currently stands at 14, which matches the end-of-project target of 14 as well. The number of EC&EE projects that have been carried out in public-sector buildings, influenced by the results and outcomes of the technology application demonstrations, currently stands at 7. This falls short of the initial target of 16 projects.

143. The current number of trained public-sector building personnel capable of proficiently designing, implementing, and evaluating buildings that incorporate EC&EE technologies is 4, falling short of the project's end-of-term target of 10. The current count of public-sector buildings that have initiated energy management programs and executed EC&EE projects stands at 8, which falls short of the project's original target of 32.

144. Following a comprehensive assessment of the project's primary goal, main objective, and its four **overall outcomes**, the overall project outcome is rated as **4**, indicating a **moderately satisfactory** level. It's worth noting that this rating considers the need to achieve additional targets within each of the four outcomes, although progress is gaining momentum following the contract award, with equipment and fixtures in place and installation picking up pace.

4.3.6 Country ownership

145. GoFSM demonstrated a robust sense of project ownership and collaborated effectively with IPs and stakeholders. The government's dedication to and ownership of the project are remarkable. Indeed, senior government officials from the DoR&D and other relevant departments and divisions were actively engaged in project inception, design, planning, and execution. This degree of involvement became possible through regular review and reflection sessions, along with the organization of frequent PAB meetings. Additionally, the dissemination of PAB's decisions among the pertinent project stakeholders contributed to building trust and fostering harmony among them. Furthermore, both the GoFSM and donor agencies are enthusiastic about providing financial support for expanding the renewable energy initiatives already begun. The GoFSM took proactive measures, including the development, modification, and implementation of plans, policies, and regulatory frameworks related to EC&EE, to bolster the project's overarching objectives and achieve favorable outcomes. Additionally, there were reports of certain government officials harboring personal interests contrary to the project's activities. However, these concerns were addressed following an interaction between the Assistant Secretary of the Energy Division and the state's chief executives.

146. The establishment of the PAB underscored the government's commitment as its members represented both national and state government entities, and the DoR&D Director serving as the chairperson. This board was awarded the highest authority of any stakeholder in making critical decisions regarding project implementation. The project successfully engaged a diverse range of stakeholders, including various ministries, departments, I/NGOs, UN agencies, academic institutions, and CSOs, to maximize its outcomes. The project aligned seamlessly with ministerial strategic plans and sectoral policies related to climate change mitigation and disaster risk reduction. This project's robust country ownership is evident from the fact that States actively sought to replicate project ideas and technologies using their own financial resources and the project's technical assistance.

147. Because of FSM's decentralized political structure, individual State governments possess significant authority, including jurisdiction over alternative energy. The project aligned seamlessly with the development priorities and plans of the GoFSM. Specifically, the project was geared towards addressing the development priority of arranging for sustainable energy to lower the cost of electricity costs. The project was designed and executed with close coordination and consultation with various government agencies. Indeed, multiple government entities and institutions participated actively in its implementation.

148. To assess country ownership, GEF evaluations need to ascertain that the project aligns with the stated sector development priorities. In addition, they must confirm that project outputs, such as new energy-related laws, were developed with the involvement of government officials and incorporated into national strategies, policies, and legal frameworks. Both of these criteria were met by this project. The endorsement of these policies by the GoFSM was led by the DoR&D. The project had clear and direct connections to national development and sectoral plans in that its overarching goal was of reducing energy demand through the implementation of EE retrofits and, in consequence, decreasing electricity costs.

4.3.7 Sustainability: financial (*), socio-economic (*), institutional framework and governance (*), environmental (*), and overall likelihood (*)

a. Financial sustainability

149. Financial resources, among numerous other factors, played a crucial role in ensuring the sustainability of the project's outcomes. The most substantial cost incurred was the procurement and installation of AC units and associated equipment and fixtures. Contractual agreements with the vendor/installer included a special clause stipulating that the responsibility for any maintenance needed within the first year following installation would lie with the vendor/installer. This strategic decision effectively eliminated O&M costs for the administrators of the concerned public buildings.

150. The savings realized from the reductions in electricity bills attributable to retrofitting and the installation of more efficient AC units have motivated state governments to enhance their buildings, transition to more energy-efficient lighting, and assume responsibility for the O&M of solar AC units. It has been noted that the FSM government may require additional resources to continue issuing reports on energy usage in public-sector buildings and energy consumption as a whole as well as ISO 50001-style annual reports if EE officers are unable to write such reports due to limitations in their capacity.

151. During the evaluation consultations, the managers of each building declared his or her commitment to developing annual O&M plans and allocating budget for O&M. This action suggests that managing the resources required for O&M would not pose a significant challenge. With building managers and state governments incorporating EC&EE initiatives into their future action plans, it is highly likely that the project's outcomes will be sustained in the long term. Given that climate change mitigation is a top priority for both national and state governments, resources are expected to be available from development partners other than GEF to ensure the project's sustainability once GEF assistance comes to an end. Collaborating with other UN and development partner initiatives to secure co-financing and involving commercial banks and financial institutions would enhance the aspect of financial sustainability.

152. The assessment of financial sustainability takes into account several factors, including (a) the O&M mechanism in place, (b) the commitment to allocate funds for O&M in the immediate future, and (c) the overall ownership of the project by stakeholders. The project strategically incorporated O&M costs into the responsibilities of the contractors for a one-year period. Each building manager has expressed their commitment to developing annual O&M plans and budget allocations for O&M from their annual budgets. Additionally, the project contributed to electricity tariff savings after the installation of hybrid ACs, fostering a strong sense of ownership among stakeholders. Consequently, its' rating is **4** (**likely**) that the project's outcomes will be sustained in the long term.

b. Socio-economic sustainability

153. The socio-political sustainability of the project rests on the willingness of project stakeholders to continue to seek the services and benefits stemming from the EC&EE interventions and to align themselves with government policies and plans even after the project concludes. State governments represent the primary source of revenue for FSM's only utility company. A reduction in the cost of utilities would naturally result in a decline in the utility company's revenues and could raise concerns about revenue flow. However, stakeholders emphasized during consultations that given the high priority accorded to climate change mitigation by both the national and state governments, any potential reduction in revenue is of far less concern than the imperative of climate change mitigation, especially since FSM is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC).

154. An examination of FSM's existing policies at both the national and the state levels, along with the results of stakeholder consultations and available data, revealed that there are no immediate or foreseeable long-term socio-political risks. In addition, because the government administration selected specific public buildings for demonstration purposes, there will be no socio-political issues, disputes or concern, particularly as these buildings represent high electricity consumers. Currently, no socio-political risks have been identified that would jeopardize the long-term sustainability of the project's results. However, the shortage of qualified personnel and workers is an emerging issue which may slow the pace of EE retrofitting in public buildings in the future. Conducting tailored training sessions for local electricians and gathering data on organizations that share global best practices contribute significantly to the promotion of socio-economic sustainability.

155. The evaluation of socio-economic sustainability was conducted based on three key factors: (a) the willingness of project stakeholders to continue seeking the services and benefits resulting from the EC&EE interventions and their commitment to aligning these technologies with government policies and plans, (b) the level of priority assigned to "climate change mitigation" in both the national and state governments' contexts, and (c) the assessment of foreseeable short and long-term socio-political risks. Upon careful analysis of these three parameters, it was determined that willingness among stakeholders has been high, climate change mitigation holds a topmost priority status within FSM, and there are no immediate risks associated with the socio-economic arena. As a result, the socio-economic sustainability is rated as **4 (likely)**.

c. Institutional frameworks and governance sustainability

156. Since this project is being implemented under the NIM, there are neither institutional framework nor governance risks. The project was meticulously designed and executed with transparency, accountability, and responsiveness to the needs of all stakeholders in mind. No stakeholders interviewed raised any concern about the mishandling of project funds by any party, whether staff, contractors, or suppliers. However, there is a need to address policy-related barriers by revisiting the endorsement procedures of each state.

157. At the national level the Energy Division falls under DoR&D, but in Yap State, it is under the purview of Department of Planning and Budget. However, this arrangement is too supportive for the success of the project. The sustainability of long-term results relies heavily on institutional frameworks and governance.

Under Component 1, the project supported the development of policies, regulations, and guidance on EC/EE within the context of the existing institutional frameworks and governance. The PMU actively advocated relevant stakeholders to approve these policies. Institutional sustainability was reinforced by establishing a pool of trained technicians who will ensure that the technical skills needed to support future O&M are available at the national and state levels. The project's upcoming capacity-building plan will contribute to these sectors and has already initiated efforts to address policy gaps, which represent a significant contribution from the project.

158. The project is building the capacity of FSM to operate and maintain EC/EE measures in public buildings and, once the EMRS is in place (by October, it is planned), to collect and analyze data and information related to the performance of EC/EE measures in these buildings. While the response of government personnel has been positive, it remains to be seen how the project's training programs will integrate with and utilize the EMRS to collect data from public buildings. There is an ongoing need for information and knowledge dissemination through long-term capacity strengthening. Climate change mitigation and, specifically, GHG emission reduction at the national and state levels are high priorities for FSM and UNDP. Policy frameworks and mechanisms have been instrumental in reducing environmental degradation and supporting effort to mitigate climate change. The information collected from various sources indicates that there are minimal risks within the institutional frameworks and governance. This is primarily due to the absence of any legal frameworks, policies, governance structures, or processes that could jeopardize the continued benefits generated by this project. The project facilitated the development of three policies and the establishment of a mechanism for ensuring accountability, transparency, and the transfer of technical knowledge even after the project's conclusion. Plans are in place to enhance institutional capacity (including systems, structures, staff, expertise, etc.) for long-term self-sufficiency. Furthermore, it was noted that the project's current leadership possesses sufficient capabilities to adapt to future institutional and governance changes and sustain the overall benefits of the project. The current institutional mechanism also promotes gender equality and addresses human rights concerns within the EE/EC initiatives.

159. As this project is implemented under the NIM, there are no concerns related to the institutional framework since it has been overseen by the DoR&D, thereby mitigating governance risks. Notably, there have been no reports of mishandling project funds, indicating an effective governance system. Furthermore, the project has played a role in the development of three policies, although these policies require final approval to transition from being policies to actual "laws." The approval process and the systematic enforcement of these policies are anticipated to take a considerable amount of time. The sustainability of both the institutional and governance aspects also hinges on the stakeholders' ability to access ongoing services from EC/EE technologies, which will necessitate training initiatives set to commence once the EMRS (likely by the end of October) is established. Given these factors, the overall rating for the project is **4 (likely)**.

d. Environmental sustainability

160. The FSM is prone to several natural disasters, including typhoons, salinization, and droughts, and flash floods and landslides occurring from time to time. The project reduced energy consumption and GHG emissions by strengthening the institutional regulatory framework for the installation of EC/EE technologies. Stakeholders did not mention any significant environmental risks other than the safe disposal of AC units, and, in any case, the project adopted a measure to address this concern: it established a connection, a PPP, with a recycling center that manages old AC units to prevent environmental damage and salvages valuable components.

161. The project took steps to ensure the safe disposal of EC/EE equipment without causing environmental harm. Thanks to the project and its stakeholders, everyone involved is familiar with the installation, storage, and disposal procedures that conform to EPA regulations. If these regulations are ignored, however, there could be potential environmental threats. It is reassuring that the PMU has already established MoUs and LoAs with relevant stakeholders to ensure proper disposal in line with the EPA's mandates. These mechanisms will help ensure that the likelihood of environmental risks remain negligible. During the consultation with project's stakeholders in Yap about the letters of agreement (LoA), they said:

> *The signing of LoAs with project partners faced delays. For example, the LoA with the Yap State Government was originally scheduled for signing in December 2020 but was only finalized in January 2023, nearly 24 months after the project commenced. This delay was primarily attributed to the change in government leadership and the need to brief new members about the project.*

162. One key environmental concern that may affect the sustainability of solar panel installations is the impact of severe weather, particularly tropical storms and typhoons. Solar panel and AC installations must be robust if they are to withstand strong winds and heavy rainfall. Certification of and labelling for quality control and safety, coupled with affordable and reliable insurance support, can enhance the resilience of solar systems. While higher temperatures and extreme events, such as the heavy rain that accompanies by windstorms and typhoons, may pose a threat to the sustainability of the installed technologies, these risks, at least according to the data of the last 30 years, are currently minimal.

163. None of the stakeholders have raised any substantial environmental concerns apart from the safe disposal of AC units, which is being managed through a PPP arrangement. Stakeholders have demonstrated sufficient knowledge and commitment to disposal procedures based on EPA regulations. Moreover, based on data spanning the last 30 years, there are no significant threats from windstorms and typhoons that would jeopardize the sustainability of the installed technologies. Consequently, the rating for environmental sustainability is **4**, (**likely**).

e. Overall likelihood of sustainability

164. Stakeholders at both the national and state government levels recognized the tangible benefits the project brought, particularly in terms of reducing electricity costs, and are actively exploring additional avenues to incorporate EE technologies. They have truly taken ownership of the project, with the majority of stakeholders proudly referring to it as "our project," notwithstanding the financial and technical assistance provided by UNDP/GEF.

165. To consolidate and expand upon the project's best practices and lessons learned, state governments decided to continue funding the services of EE Officers through their annual budgets. This extension of funding will facilitate the broad adoption of similar technologies in other public buildings and the institutionalization of the achievements attained thus far. To streamline the engagement of relevant project stakeholders, the project signed MoUs with them. The results—significant reductions in energy consumption and correspondingly lower electricity bills—have piqued the interest and commitment of building managers. In fact, however, some States had already demonstrated an interest in energy efficiency. Chuuk State, for example, had procured and installed EC&EE inverter AC units prior to the project's intervention. In addition, it had been using EC&EE LED lighting across its entire school system for the previous four years. Similarly, Pohnpei State Hospital had begun to use EC&EE LED lights and EC&EE inverter AC units even before the project's intervention commenced.

166. The sustainability of the project hinges on the commitment of project stakeholders to provide ongoing support for preserving already realized project benefits and for expanding these benefits to new locations using their technical expertise. While stakeholders do recognize the advantages of EC&EE technologies in reducing electricity costs and mitigating climate change, they possess limited technical skills, insights, and knowledge about these technologies. This knowledge gap is attributable to the lack of capacity-building initiatives on offer by the government.

167. To remedy this shortcoming, the project scheduled a series of training programs to be conducted once EMRS is installed, planned in October 2023. The goal is to address knowledge and skill gaps comprehensively. In addition, the project has outlined plans to provide training to relevant staff members serving in public buildings to enable them to operate and maintain EC&EE AC units effectively to ensure their long-term functionality. The presence of state-level EE officers is invaluable. These officers not only facilitate coordination between state governments and public building managers but also play a vital role in sustaining the project's initiatives by offering technical insights, ideas, and knowledge.

168. The project has played a pivotal role in reducing electricity costs and is proactively seeking further opportunities to integrate EC/EE technologies by adhering to best practices and lessons learned. Additionally, state governments have made the decision to continue funding the services of EE Officers through their annual budgets. Nonetheless, there is still a need to document and disseminate the best practices and lessons learned, as well as facilitate the replication of EC/EE initiatives on a larger scale (however, this is a continuation process). Based on the comprehensive review in the preceding sections, there are no apparent risks anticipated to compromise the financial, socio-economic, institutional frameworks, governance, and environmental sustainability. Consequently, the overall probability of sustainability is assessed at 4 (**likely**).

4.3.8 Gender equality and women's empowerment

a. Address the issue of GESI as it applies to the design, implementation and monitoring of the project

169. During evaluation interviews, stakeholders said that the project exhibits a degree of gender neutrality as it equally impacts and benefits men and women by enhancing working conditions, creating employment opportunities, and improving the physical work environment. Notably, the project also places additional focus on empowering women through capacity-building and other relevant initiatives. Throughout the project's implementation, both men and women actively participated in assessing EC&EE needs, developing training materials, and planning to participate in training sessions. Consequently, both men and women who work in or visit public buildings have reaped the benefits of improvements in living and working conditions brought about by the installation of EE and environmentally friendly technologies. Moreover, there is a need of craft and implement gender plan with revised work plan and use a scenario-based gender-responsive costing framework during project formulation.

b. Project's contribution to gender equality and women's empowerment

170. The project made a conscious effort to incorporate a gender equality and social inclusion (GESI) approach into its staff composition, PAB membership, and interventions, particularly in areas such as capacity-building. Within the PMU, which comprises seven members, two positions, namely those of the project manager and the administrative/finance officer, were held by women. All the members of the PAB, however, were men.

171. In selecting demonstration public buildings, the project considered indicators such as energy consumption levels. Notably, approximately 60% of the occupants of these buildings, which included administrative and hospital facilities, are women. They included both staff and visitors, who, by utilizing the project's facilities and services, created a better working environment, as confirmed during interactions with female employees during the TE field mission. On gender assessment, PMU staff during interview said:

> *"In September 2022, a gender assessment was conducted to ensure the integration of gender considerations into the ongoing policy development work. The project also has plans to involve more women in training sessions and workshops designed to enhance their capacities in the field of EC&EE technologies. These initiatives are expected to be implemented by the end of October."*

172. The project actively promoted an equitable, inclusive, and gender-responsive approach to EC&EE initiatives. Women's access to and control over sustainable energy products and services improved significantly. The project continuously encouraged IPs to adopt and enhance the project's gender action plan based on ground-level insights, while also mainstreaming GESI into project interventions whenever feasible.

173. To bolster women's participation in project activities, the project plans to employ an "affirmation approach" designed to engage more female participants in upcoming training activities. The project has also started to create local employment opportunities for both men and women, offering roles as vendors, suppliers, installers, and more. Notably, the project demonstrated gender equality by selecting one female vendor out of the three it selected to supply and install 25 EC&EE AC units at Pohnpei State Hospital. In addition, a female consultant was engaged to carry out the ESIA.

174. During interviews, stakeholders highlighted the fact that an increasing number of women and women-led vending companies are gravitating towards clean energy-related businesses and enterprises, reflecting the expanding number of opportunities for women in the energy sector. Women-led vending companies were provided opportunities to offer their services during project implementation. The project found that hiring such companies involved no comprise in quality standards, a fact suggesting that women may play a more prominent role in the future as entrepreneurs in the energy sector.

c. The project's contributions to gender results that advanced the project's outcomes

175. In order to make the project more responsive to gender-based needs, the woman project manager played a significant role in involving more women stakeholders in the project's activities when it was appropriate. The project emphasized the roles of both men and women as happens when the true essence of gender equality is observed. Since both men and women actively contributed their insights, ideas, and experiences, the project was able to convey a well-balanced message to society. Although GESI assessments do, of course, involve subjective judgments, multiple stakeholders noted that women became more adept and strategic at promoting education and awareness about the project's message regarding the advantages of clean energy. Those working in buildings with the improved services experienced reduced health risks and an enhanced working environment.

176. Thanks to the project's approach, the gender aspects of the project are effectively monitored by disaggregating data according to the gender action plan (GAP). However, the GAP was not periodically revised to mainstream new issues and concerns derived from learning. Since the project focused primarily

on retrofitting public buildings through EC&EE initiatives, its activities had limited scope to catalyze developmental effects beyond raising public awareness. Nevertheless, it was observed that the project's interventions did have a positive impact on the health and safety of women and children in the retrofitted schools and hospitals. In general, EC&EE measures generated environmental, social, and economic benefits for both men and women.

4.3.9 Cross-cutting issues

a. Effects on local populations considered in project design and implementation

177. Overall, the project has had a positive impact on the local population of FSM, both at the national and the state levels. It aligns with FSM's objectives by reducing fossil fuel usage and thereby bringing about notable environmental and societal benefits. Throughout its design and implementation phases, the project took into account the limited technical expertise of stakeholders in the field of EE and clean energy technologies. This consideration led to the conducting of a capacity-gap analysis, the developing of training curricula, and the designing of training packages, all measures which are currently in progress.

178. Capacity-building is a crucial element of the project. In the initial stages, the high electricity tariffs imposed by the government of FSM posed a financial burden to public buildings. However, with the installation of EE and clean energy technologies, electricity bills decreased, saving money in the long term. Energy consumption will continue to decrease as the new technologies are replicated up to household level, and the population will benefit from significantly lower electricity tariffs, thereby improving their living conditions.

b. The effect of partnerships on project achievement now and the future

179. The installation of Yap State's first solar AC units marked a significant milestone: within just two months, stakeholders observed a substantial reduction in electricity bills. This evident advantage generated considerable interest from various quarters, including other government agencies, private-sector entities, and individual actors, all of which expressing a keen desire to replicate this technology. The project consistently served as a catalyst, motivating state governments to seek additional support from the national government and development partners in order to replicate the project's promising initial outcomes. This project effectively opened everyone's eyes to the possibilities of EC&EE.

180. Inspired by the valuable lessons of this project, state governments signaled their intent to adopt similar EC&EE initiatives. During consultations, representatives of the state governments of both Yap and Pohnpei voiced their view that this project is a "model project." Their positive assessment suggests that the project's best practices and insights will be adopted and replicated by governments, development partners, international agencies, UN agencies, and civil society organizations. In fact, a few preliminary results have already begun to be duplicated. To summarize, partnerships between the project and both national and state governments yielded positive outcomes for addressing long-term climate change mitigation.

c. Effectiveness of ways of working with partners and partners' contributions to project achievements

181. From the project's inception, it has collaborated with IPs and various stakeholders. The high degree of cooperation, the valuable in-kind assistance, and the crucial technical guidance provided by those all played a significant role in the project's achieving its targets. As a whole, partners demonstrated strong support for the project's objectives. The backing received from the primary IP, DoR&D, in conjunction with assistance from other relevant departments, state governments, building managers, and the PAB, were collectively instrumental in helping the project achieve its overarching outcomes.

d. Creation of synergies in partnership with state government and types of partnerships for the future

182. The project's collaboration with state governments fostered valuable synergies throughout the project, spanning from its conceptualization to the design and implementation phases. Occasionally, there was a noticeable disparity between the priorities of the national government and those of state governments. The national government's priorities do not always align with those of the state governments, a discrepancy which results in delays in procurement and logistics, complicated by the large geographical distance between the governments.

183. EE officers, because they liaise between the project and state governments, significantly improved working relationships and helped expedite project activities by addressing bottlenecks. Effective communication with government leaders was the cornerstone of this progress. In addition, the establishment of energy working groups dedicated to handling energy projects at both the national and state levels also enhanced partnerships among relevant agencies and created a harmonious synergy regarding program implementation.

e. Benefits of project for ethnic minorities, PwDs, women and other disadvantaged groups

184. The project enhanced the overall working environment for occupants of the buildings by delivering EE solutions. It effectively expanded access to clean energy for all, without discrimination based on gender, caste, class, socioeconomic status, or other factor. The project's positive impact extended to ethnic minorities, persons with disabilities (PwDs), women, and other marginalized and disadvantaged groups: it ensured that they too benefit when visiting, working at, attending training sessions at, or participating in meetings at public buildings.

f. Integration of the human rights-based approach in the design, implementation and monitoring of the project

185. Participation in workshops, training sessions, and other relevant activities associated with the project did not aim specifically at any particular gender or group; instead, they were open to all. Throughout the project's implementation and monitoring phases, a human rights-based approach was adopted. This approach ensured the active involvement of all stakeholders. Stakeholders willingly provided pertinent data, shared their concerns and issues during interviews, and granted access to their buildings for the project's implementation and monitoring activities. Importantly, stakeholders consented to sharing all the disaggregated data the project wished to collect.

g. Use of resources to address human rights during implementation

186. Since the project adopted an effective strategy, it was able to use all available resources efficiently. Project stakeholders at both the national and state levels were treated equitably regardless of their gender, caste, class, socioeconomic status, or other class. The project's primary objective was always focused on promoting the adoption of EC&EE, thereby bringing all of FSM closer to reducing its dependency on fossil fuels. Within the demonstration public buildings, stakeholders now work and learn in a pleasant environment. The project played a pivotal role in enhancing conditions for employees, managers and visitors, safeguarding their fundamental rights in this regard.

4.3.10 GEF Additionality

187. In accordance with the GEF Evaluation Policy, TEs are mandated to appraise at least six dimensions[17] of GEF additionality, or supplementary benefits such as environmental benefits, directly associated with a GEF-supported project. This project was found to have a discernible impact on all six dimensions, at least according to the majority of primary, secondary, and tertiary stakeholders interviewed. The consensus among them was that, without this project, the feasibility of conceptualizing and executing demonstration projects in public-sector buildings that mitigated climate change impacts would have been virtually nil. The project's contributions were channeled through diverse means, including conducting studies, surveys, assessments, and training sessions, as well as furnishing training manuals and toolkits. Interviews conducted with project IPs, stakeholders, and officials from the GoFSM revealed that the project effectively nurtured institutional growth and enhanced governance. The project also cultivated an environment conducive to engagement, participation, and involvement while addressing the necessity of mitigating climate change mitigation.

188. Through the dissemination and adoption of acquired knowledge, best practices, and accomplishments, the project managed to surpass its initially envisaged outcomes. In addition, it significantly enhanced capacity and technical proficiency in EC&EE technologies, thereby facilitating the transformation of traditional energy usage into a more efficient and sustainable mode aligned with environmental objectives. Legal and regulatory additionality was realized through reforms related to EC&EE technologies. Legislative initiatives were undertaken to bolster these technologies, thereby enhancing the effectiveness of management and fostering programmatic synergies. Financial additionality was ensured by the GEF, which provided additional funding to transform a project with primarily national and local benefits into one with broader global environmental advantages. Innovation-driven additionality was accomplished by adeptly managing sustainable technologies and knowledge; effectively challenging prevailing social norms, barriers, and practices; and transitioning toward more sustainable and contemporary technologies. Socio-economic additionality was attained by reshaping mindsets regarding traditional energy usage and encouraging the adoption of cleaner and more sustainable energy practices. Regarding specific environmental gains, the project significantly reduced CO_2 emissions. In addition, it played a strategic role in implementing the key indicators of SDGs, the Sendai Framework for Disaster Risk Reduction (SFDRR), and the NDC of FSM.

[17] (i) Environmental, (ii) Legal/Regulatory, (iii) Institutional/Governance, (iv) Financial, (v) Socio-Economic/Innovation

4.3.11 Catalytic role/replication effect

189. In evaluating the project's ability to showcase the scaling up, replication, demonstration, and creation of public goods, the TE determined that the project played a pivotal role in demonstrating the application of EC&EE technologies. The project exhibited substantial potential for replicating and expanding its best practices and the insights it gained from its demonstration projects in public-sector buildings in all four states. The project's methodology and interventions can be extended to both public- and private-sector buildings. Furthermore, this approach can be adapted for individual households to reduce domestic electricity costs. The stakeholders interviewed expressed much confidence in the project's capacity to replicate its best practices and knowledge. The TE also found that the project's framework has much relevance for numerous other North Pacific countries facing the challenge of high electricity bills. Given that several development partners, including the World Bank, ADB, EU-SPC, and JICA, prioritize renewable energy as a key focus area, it is highly likely that the project's innovative solutions will be replicated within and beyond the FSM. The project effectively addressed challenges by employing an approach that triggered and amplified financial support for low-carbon investments. It is noteworthy that the funding for low-carbon retrofits in public buildings was entirely grant-based and primarily for the purpose of demonstration.

4.3.12 Progress to impact

a. Achievement of planned outputs and their contribution to the project's outcomes and objectives

190. As of June 30, 2023, in terms of financial delivery, the project had achieved approximately 61% of its overall targets. But as of Aug 31, 2023, it is 74.78%. In comparison to Component 3, however, progress in the other three components was relatively sluggish. Nonetheless, the

project is in right track in achieving its majority of intended outputs, and projected that the remaining outputs would be achieved by October, 2023. The accomplishment of the project outputs played a crucial role in meeting the associated outcomes and ultimately contributed to the realization of the project's overarching objective.

b. The achievements of impact-level results that consider global environmental benefits

191. While the project's primary focus was on achieving local objectives, it has made a noteworthy contribution towards global environmental benefits. This contribution is primarily attributable to the project's core goal of reducing GHG emissions. Stakeholders argued that the project had a role in generating global environmental benefits at the impact level for two key reasons: (i) the project carefully disposed of old and non-functional ACs and fixtures to prevent any harm to the local population and environment, and (ii) it diligently adhered to the EPA guidelines on safe disposal in each of the states where it operated.

192. The project's progress towards achieving impact encompassed several elements: the reduction of environmental stress by lowering GHG emissions, active participation in policy initiatives by formulating three EC&EE policies, strengthening institutions, and building capacity of the stakeholders. In the short term, the project improved working environments and reduced energy consumption. In the medium term, it saved money by decreasing energy consumption. Over the long term, the project's enduring impacts included less reliance on fossil fuels and thus a smaller carbon footprint. Ultimately, the project should have lasting positive effects.

Box-2: Stakeholders' views about the project's preliminary impacts

193. *"Some of the immediate impacts include a reduction in the cost of electricity, an increase in the accessibility of energy services, the utilization of EC&EE technologies, and the heightened interest of the financial sector in investing in the clean energy sector."*

194. *"Government policies and regulations played a pivotal role in advancing EC&EE in buildings. Among the significant impacts generated by the project was the development of three EC&EE-related policies, all of which addressed critical policy gaps. The project played a pivotal role in drafting these policies, which are currently in the process of being endorsed by the government of FSM. The endorsement of these policies will represent a very promising opportunity to bolster this sector through the collaboration of development partners, financial institutions, and CSOs. The project's support for policy is expected to yield long-term benefits for FSM. These policies and regulations will help reduce energy consumption and GHG emissions as well as stimulate innovation within the public-building sector."*

195. *"The rapid growth in energy consumption within public buildings exacerbated the impacts of climate change by increasing carbon emissions. Indeed, the energy usage of and carbon emissions from buildings constitute significant contributors to the phenomenon of climate change. This project is working to reduce these negative consequences, however."*

196. *"The project had several noteworthy social, economic, and environmental benefits. In terms of social benefits, it improved air quality, enhanced comfort, and reduced the health risks associated with extreme weather events by mitigating harmful emissions. Economically, the adoption of EC&EE technologies reduced electricity bills, which will result in cost savings over the long term even if the initial upfront costs are relatively high. Although the initial construction expenses for EE buildings may be elevated, these costs are often offset by subsequent reductions in energy expenditures. Such reductions, in turn, contribute to overall cost effectiveness and financial benefits for building managers calculated in terms of resource utilization and return on investment. Furthermore, such projects create jobs in sectors such as construction, manufacturing, and renewable energy. Energy-efficient buildings also deliver substantial environmental advantages. Through the utilization of EC&EE technologies, buildings can reduce their dependence on fossil fuels and lower their carbon footprint. Solar power is a commonly employed form of renewable energy within buildings. On the environmental front, EC&EE public buildings not only curtail energy consumption and GHG emissions but also play a pivotal role in fostering a more environmentally green and sustainable world."*

197. *"Unscheduled power outages were a common occurrence before the project. These outages decreased the productivity of staff forced to work in uncomfortable conditions and had a detrimental impact on electrical equipment, particularly by reducing the overall lifespan of large appliances. Prior to the introduction of hybrid AC units, another challenge was the exorbitance of electricity bills. The new hybrid AC units, which utilize solar energy, not only maintain office temperatures at a comfortable level but also reduce electricity costs. Numerous benefits are associated with these units. From an end-user's perspective, the only challenges officials faced during installation was the interruption of work on the day the units were installed. The effective communication of pre-planned installation schedules, however, made for nearly seamless operations even during the installation periods."*

198. *"The project's design was crafted to facilitate South-South and triangular cooperation by promoting the exchange of experiences and approaches within the Pacific region through peer-to-peer exchanges and mentoring. Recent South-South activities related to EC&EE development involved knowledge sharing and mutual learning, thereby allowing for a two-way exchange of best practices and lessons learned."*

Box-3: Stakeholder's views about this project in Yap State

199. *"In Yap State, the solar AC project initiated by Yap State Government aimed primarily to address the increasing financial burden of utilities. This initiative was in line with both state and national objectives to transition from traditional energy sources such as fossil fuels to cleaner, renewable energy alternatives. The project was completed in May 2023, and it is now effectively regulates the temperature within the administrative building with solar ACs. The building still relies on the electricity grid to power lighting, outlets, and various office equipment, however. One unexpected challenge encountered while implementing the project was the need to rewire the building to meet the energy demands of the solar ACs, a task not initially considered in the project's planning and budgeting. To ensure the project's success, Yap State Government covered the expense of rewiring. The positive impact of this cost-saving measure is demonstrated in Table 4.*

Table 4: Branch utility billing

Month	Admin Building	Total Exec. Branch Bill
January	$ 6,427.73	$ 13,702.27
February	$ 6,956.26	$ 13,974.92
March	$ 6,417.75	$ 13,439.58
April	$ 7,357.69	$ 14,375.80
May	$ 7,452.82	$ 14,473.99
June	$ 4,672.01	$ 11,689.80
July	$ 4,122.18	$ 11,236.27

Source: Consultation with stakeholders, Aug-Sep, 2023

200. *As Table 4 illustrates, the administrative building has registered an average monthly reduction in utility costs of approximately $2,500 since the competition of the project. This amount is 47% of the total bill for executive branch utilities incurred so far this year. Since the implementation of the project, the administrative building has successfully reduced its utility expenses by 36%. The anticipated annual savings in utility costs for the administrative building amount to $30,000, a significant conservation of resources. The outcomes of this project are undeniably positive. To ensure sustainability, the project budget included short-term O&M costs for one year. In addition, Yap State Government committed itself to incorporating O&M costs into its own plans and budgets. It's worth noting that repairs and maintenance will be carried out by skilled technicians from the local utilities company, Yap State Public Service Corporation (YSPSC), who are experienced and trained in working with solar energy equipment. The success of this endeavor may serve as a catalyst for further adoption of solar energy to fulfill the government's energy requirements.*

201. *"This project has numerous advantages: it has substantially reduced GHG emissions, enhanced air quality, and bolstered energy security by decreasing dependence on fossil fuels. Furthermore, it has generated new employment opportunities that contribute to the overall economic growth of the nation. The cost effectiveness of this project is evident, as solar energy is abundant and essentially free. While the initial upfront investment was substantial, it pales in comparison to the overall benefits it will bring."*

202. *"The project played a key role in the development of an EC/EE policy, regulations and guidance. These policy documents are currently securing approval within the FSM Congress and the legislative bodies of the four states. These policies must undergo an extended legislative process at both the congressional and state levels to transform them into legally binding documents. Though the approval process takes a lot of time, it is obvious that if it goes through several rounds of review, it will create a larger impact on FSM's energy sector arena. The government and many stakeholders will remember this project for years because of its contribution to policy."*

203. There were indeed some challenges during the initial phases of the project. These challenges included high initial expenses, insufficient awareness and comprehension among stakeholders, regulatory obstacles, and a lack of experience and capacity in the EC&EE sectors. That said, viable solutions exist to address these challenges. In particular, financial incentives, including subsidies and tax incentives, can effectively mitigate the high upfront costs associated with energy-efficient buildings; initiatives focused on education and training can enhance awareness and understanding of EC&EE practices, thereby addressing the knowledge gap among stakeholders; and policy reforms can play a pivotal role in eliminating regulatory barriers and fostering a favorable environment for the development of energy-efficient buildings.

204. While addressing these initial challenges, it's important to acknowledge potential future challenges such as a shortage of technical staff and skilled workers, as well as rising equipment and fixture costs. These factors could impede the project's implementation progress and pose higher risks to achieving its GHG emission targets. To pre-emptively tackle this issue, it is advisable for the project to consider advancing contractors up to certain percent of contract value upon selection. This approach enables contractors to procure the necessary equipment, fixtures, and manage skilled labor in a timely manner, ensuring the timely delivery of agreed-upon results.

Table 5: Changes of energy consumption (before and after the installation of ACs)[18]

Location	Average energy consumption /month (before)	Average energy consumption /month(after)	GHG emission (before)	GHG emission (after)	Monthly electricity tariff (before)	Monthly electricity tariff (after)	% Energy savings
Pohnpei							
Pohnpei State hospital	116233kWh $48818	75551kWh	1185577 kg of $C0_2$ is expected	770620 $C0_{2\ is\ expected}$	$0.42	$0.42	35
Pohnpei Radio station[19]	3600kWh at $1512	2700kWh	36702 kg of $C0_2$	27540 kg of $C0_2$	$0.42	$0.42	25
Pohnpei Admin building	17857kWh at $7500	13393kWh	182141kg of $C0_{2\ is\ expected}$	136609 kg of $C0_{2\ is\ expected}$	$0.42	$0.42	25
Pohnpei Department of land[20]	905kWh	679kWh	9231 kg of $C0_{2\ is\ expected}$	6926 kg of $C0_{2\ is\ expected}$	$0.42	$0.42	25
Pohnpei Department of Education	4762kWh	3571kWh	48572 kg of $C0_{2\ is\ expected}$	36424 kg of $C0_{2\ is\ expected}$	$0.42	$0.42	25
Pohnpei office of fisheries & aquaculture[21]	NA- new building	NA- new building	NA	NA	$0.42	$0.42	NA
Pohnpei Public defender building	881kWh	661kWh	8986 kg of $C0_{2\ is\ expected}$	6742 kg of $C0_{2\ is\ expected}$	$0.42	$0.42	25
Chuuk							

[18] Some of the building installations has been finalized, while the ongoing installations are reported to be concluded by October 2023. Energy consumption levels were recorded both before and after the project's installation, considering the electricity tariff and monthly energy expenditure. For the installations that are not yet completed, post-installation energy consumption is estimated through a physical energy audit using the monthly energy expenditure data, along with the payback period of the intervention.

[19] Certainly, there has been a recent change initiated by the Pohnpei state government, opting to carry out a comprehensive renovation of the previously chosen buildings.

[20] Certainly, there has been a recent change initiated by the Pohnpei state government, opting to carry out a comprehensive renovation of the previously chosen buildings.

[21] Certainly, there has been a recent change initiated by the Pohnpei state government, opting to carry out a comprehensive renovation of the previously chosen buildings.

Chuuk State Hospital	83533kWh at $48616	62650kWh is expected	852037 kg of $C0_2$ is expected	639030 kg of $C0_2$ is expected	$0.58	$0.58	25
Chuuk State High School	4326kWh at $2518	2508kWh is expected	44125 kg of $C0_2$ is expected	25582 kg of $C0_2$ is expected	$0.58	$0.58	58
Kosrea							
Kosrea High School	4341kWh at $2344	2518kWh is expected	44278 kg of $C0_2$	25684 kg of $C0_2$	$0.54	$0.54	58
Tafunsak Elementary School	1039kWh at $561	603kWh is expected	10598 kg of $C0_2$	6151 kg of $C0_2$	$0.54	$0.54	58
Yap							
Yap Admin building	9119 kWh at $6839	5487 kWh at $4115	93014 kg of $C0_2$	55967 kg of $C0_2$	$0.75	$0.75	49
Yap Radio station	2210kWh at $1657	1503 kWh at $1127	225432 kg of $C0_2$	15331 kg of $C0_2$	$0.75	$0.75	32
AM Transmitter Rm	4473 kWh at $3355	2557 at $1918	45625 kg of $C0_2$	26081 kg of $C0_2$	$0.75	$0.75	43

Note: More buildings are to be retrofitted in Chuuk because of the investment made in EC&EE ACs at Chuuk state hospital
Source, Project record, Aug 31, 2023

205. This table 5 provides information on energy-related metrics categorized by location (demo site), including (i) average monthly energy consumption (before and after), (ii) GHG emissions (before and after), and (iii) monthly electricity tariffs (before and after), as well as the percentage of energy savings. The data indicates that following the implementation of hybrid AC systems, there has been a reduction in average energy consumption and GHG emissions. Energy savings percentages range from 25% (minimum) to 58% (maximum).

5. Summary of main findings, conclusions, recommendations & lessons

5.1 Main findings

206. The project was designed to be implemented across all four states of the FSM within a three-year timeframe. Its primary objective was to contribute to FSM's national target of achieving a 50% improvement in energy efficiency by 2020. The overarching goal was to reduce specific energy consumption and GHG emissions in the building sector. The project's central focus was promoting the adoption of EC&EE techniques in the planning, renovation, and ongoing maintenance of public-sector buildings. It aimed to address five identified barriers.

207. The project's results framework consisted of one goal, one overarching objective, four outcomes, 16 outputs, and 70 activities. Each goal, objective and outcome accompanied by relevant indicators, baselines, mid-term and end-of-project targets, and mechanisms for evaluating success as well as identifying critical risks and assumptions. It was found that the project's strategic approach, as outlined in the project document, remained largely consistent for the entire project. This project provided a well-structured response to complex and interconnected development challenges in pursuit of its overarching goal. However, there are two areas of concern: first, the ToC did not adequately capture the inherent complexity of the project, and second, the project document lacked detailed information about the linkages and potential synergies among its various components as well as intermediate results. These details would provide a clearer understanding of the impact pathway leading to the project's ultimate goal.

208. The primary target of the project was to is to decreased energy consumption in public buildings and reduced emission associated with power generation from the utilities using diesel . In addition, the cumulative incremental fossil fuel savings attributed to sustainable energy efficiency and low-carbon interventions, particularly in diesel consumption, currently stands at 680.4 units. The final target was 1,042.1 units. The project successfully trained four individuals in energy-efficient technologies and has recruited and contracted five technicians (four men and one woman) to install equipment in the demonstration buildings. Under Outcome 1, the project developed three EC&EE policies along with associated guideline and rules and regulations for implementation. These policies are currently in the process of being approved. Furthermore, 14 public-sector buildings have met the energy standards outlined in these policies.

209. In terms of Outcome 2, the project played a significant role in assessing a portion of the targeted 30 buildings through a well-established energy audit system. The project has planned to generate state and national

quarterly reports on energy consumption in public-sector buildings, utilizing data provided by state power utilities. The project was tasked with creating and submitting annual reports, following a framework similar to that of ISO50001, to the FSM Energy Group. The initial target was to produce 14 such reports. Under Outcome 3, the project was involved in the planning and financing of energy-efficient technology applications in some of the initially targeted 14 public-sector buildings, which all serve as demonstration projects. In addition, the project made substantial contributions to the implementation of a subset of the 16 targeted EC&EE projects within public-sector buildings. Regarding Outcome 4, the project has to train public-sector building personnel to be proficient in managing, designing, implementing, and evaluating buildings that incorporate EC&EE technologies.

210. The overarching objective of the project was to establish energy management programs in 30 public buildings. Delays were encountered in hiring suitable consultants, resulting in some variances between planned and actual results. However, the project devised a comprehensive strategy to ensure that all targets would be met before the project concluded. The project underwent a comprehensive assessment of its assumptions and risks, taking into account a range of internal and external factors that could impact its overall performance. Internal factors included the stakeholders' familiarity with the national policy context and their established practices on the ground. After conducting a project a meticulous analysis to validate its assumptions, the project mitigated potential risks to ensure the achievement of its desired outcomes.

211. To address GESI concerns, the project incorporated GESI considerations into its design, implementation, and monitoring processes, as well as its overarching result framework. In terms of fostering partnerships, the project thoroughly examined the impact of collaborations on both current and future project accomplishments. It identified effective collaboration methods, recognized partners' contributions to the project's overall success, and established synergies with state governments. Regarding human rights, the project devised a mechanism that would benefit all individuals regardless of gender, caste, class, or wellbeing. This mechanism integrated a human rights-based approach into the project's design, implementation, and monitoring activities. The SES assessment was conducted during the design phase through extensive consultation, but periodic reassessments of SES and gender considerations were not consistently carried out.

212. Because it adopted an adaptive management approach tailored to local contexts, the project garnered positive feedback from its stakeholders. It adhered to NIM, decentralized the PAB, and enhanced the capacity of the PMU. In addition, the project carried out regular oversight, monitoring, and follow-up procedures with the active involvement of PAB members, who provided valuable strategic guidance. Despite some disparities between the originally planned and actual expenditures, the project maintained strong financial controls. These controls enabled the project to make well-informed decisions, ensuring a consistent flow and timely allocation of funds for the successful execution of project deliverables. Although the utilization of the project's budget was challenged by both internal and external factors, it is noteworthy that no allegations of mishandling funds were reported.

213. Each IP diligently adhered to its respective procurement policies for the acquisition and utilization of materials and services and all implemented rigorous financial control mechanisms. What is particularly commendable is that the project document incorporated a wide array of M&E measures and activities. These measures facilitated the effective oversight of and reporting on the progress of implementation and outcomes in line with UNDP and GEF standards and requirements. At the highest level of project management, the M&E activities were carried out by members of the PAB, who provided invaluable guidance. The PMU was responsible for daily oversight of project interventions. Furthermore, the project modified its gender action plan to mainstream gender issues into project actions, aligning this goal with the M&E Plan and placing significant emphasis on gender-related considerations.

214. The project implemented various mechanisms to ensure the sustainability of its initiatives. Government-level financial resources are in place to maintain the project's results and are supported by the necessary technical capacity to uphold the benefits achieved. Consideration has been given to socio-political factors, institutional frameworks, governance, and environmental risks to ensure the project's long-term sustainability. The project engaged a diverse range of stakeholders although it must be admitted that some have limited capacity to independently carry out activities. A key priority has been the development of knowledge management through the creation of knowledge products, albeit at a gradual pace, by documenting and scaling up best practices and lessons learned. The project has already generated several preliminary impacts. While its primary focus was on achieving local objectives, it significantly contributed to global environmental benefits, too. This contribution stems primarily from the project's core objective of

reducing GHG emissions. The project's progress toward achieving impact encompasses several elements, including the reduction of environmental stress through GHG emission reduction, active participation in policy initiatives with the formulation of three EC&EE policies, institution-strengthening, and capacity-building. In the short term, the project improved working conditions and reduced energy consumption. In the medium term, it produced cost savings through reduced energy consumption. Over the long term, the project's enduring impacts included reducing reliance on fossil fuels, leading to a smaller carbon footprint. Ultimately, the project is expected to have lasting positive effects despite the challenges it faced during the initial phases. These challenges included high initial expenses, limited awareness and understanding among stakeholders, regulatory obstacles, and a lack of experience and capacity in the EC&EE sectors.

5.2 Conclusions

215. The project was crafted with three primary objectives in mind: first, to decrease GHG emissions; second, to showcase and duplicate cutting-edge technology; and third, to improve the policy and regulatory framework of GoFMS. In pursuit of these aims, the project achieved the following milestones: the installation of 73 solar hybrid AC units in 3 demo buildings and 125 units of inverter AC, 40 more solar hybrid are expected to be installed in other demo buildings by Oct, 2023, the development of three distinct policy initiatives, and the conduction of a series of capacity-building activities for stakeholders involved in shaping policies, regulations, and guidelines. Despite the many challenges it faced, the project achieved good results. Several pivotal factors underpinned the project's success, including (i) the willingness of national and state governments and building managers to collaborate efficiently through effective coordination; (ii) the provision of tax exemptions on equipment and in-kind contributions such as office space and supplies; (iii) the provision of co-financing assistance in accordance with the project plan; (iv) the enthusiastic support of development partners such as the World Bank, ADB, EU, JICA, and others, for creating a conducive environment; (v) the effective management of essential human resources, including BEE and environmental and social specialists as well as EMRS consultants, to bridge knowledge gaps; (vi) strong leadership from IPs and dedicated support from UNDP and PAB; and (vii) the presence of an institutionally strong PMU that efficiently oversaw daily operations. As a result, the project implementation faced minimal socio-economic, political, cultural, or environmental risks, except for the repercussions of the pandemic.

216. The project has encountered numerous challenges, including (a) disruptions stemming from COVID-19 lockdowns, (b) a scarcity of adequately qualified human resources within the country, (c) a dearth of skilled labor at both the national and the state levels, (d) limited resources on the islands where the project is currently underway, and (e) delays in the tendering and procurement processes. The pandemic prevented experts and project personnel from traveling to conduct PEAs and engage in in-person discussions with stakeholders. A shortage of qualified candidates for critical roles and assessment tasks, along with a restricted pool of vendors to provide essential equipment and fixtures compounded these challenges. The geographic remoteness of the four targeted states complicated the procurement, shipping, and receipt of necessary equipment. In addition, the considerable distances between the four states made it problematic, expensive, and time-consuming to mobilize expertise across states to provide immediate technical support. The isolation of the islands, too, added complexity to logistical operations and increased overall management expenses. The islands' geographical remoteness also resulted in delays in equipment delivery, and domestic air travel incurred significant costs.

217. Nonetheless, the project adeptly employed a range of strategies and approaches to address and navigate these challenges, limitations, and obstacles. In response to the setbacks caused by the COVID-19 pandemic, which significantly disrupted operations, the PMU and IPs made effective use of online platforms such as Zoom to coordinate meetings, assess progress in activities, review and adjust work plans as needed, and provide essential support for project initiatives. In addition, the project skilfully managed logistical and communication challenges by improving communication practices, including organizing the frequent virtual meetings to maintain contact. While state government support remains limited and policies and regulations have yet to be enacted as legally binding statutes, stakeholders have demonstrated substantial interest in and commitment to ensuring the ongoing O&M of equipment and the implementation of EC&EE practices.

218. To overcome the challenge of a shortage of qualified vendors, suppliers, contractors, and laborers within the country, the project harnessed UNDP's extensive networks and years of experience. Challenges related to political interference in the recruitment of human resources were skillfully managed through mutually agreeable resolutions and a win-win approach. Right from the project's inception, it encountered various disruptions, including the global pandemic and the high prices of EC&EE equipment and fixtures in the international market. Global prices, had a cascading effect on local markets, resulting in high costs to

purchase certain materials. The high prices presented obstacles during the tendering and procurement processes. Nonetheless, the project adeptly tackled these challenges by engaging with vendors and contractors, revising cost estimates in numerous bids to prevent cancellations, and reissuing several bids to accommodate the concerns of vendors and contractors.

219. To address the shortages of human resources, the project efficiently organized its workforce and engaged short-term consultants, whose very specific roles and responsibilities were clearly defined in their ToRs. Notably, the addition of an ESIA and a BEE specialist to the team significantly expedited progress. Recruitment processes for subject-matter experts encountered delays due to the scarcity of suitably qualified candidates, especially among national technical experts. However, with support from UNDP, a technical expert specializing in EC&EE was secured, and their presence lead to substantial advancements in policies, regulations, and guidance. To mitigate the effects of sluggish progress, the project formulated a comprehensive work plan and a well-defined timeline which effectively structured the implementation of the project's envisioned activities in real-world conditions. The PMU and IPs actively monitored and assessed activities, ensuring the successful achievement of all project components at a high standard of quality. They also coordinated their efforts with UNDP to enhance synergy. Some delays in activities were attributable to the slow response of national and state governments, as well as other participating agencies, which struggled to align their efforts with commitments established during the project's design and preparation phases because the administrative framework was relatively new.

220. To enhance the organization of its execution, the project, the decision was made to increase the frequency of PAB meetings. Holding more meetings ensured that guidance was provided in a timely manner and that both emerging and persistent issues were promptly resolved. Advancement was made possible by including the minutes of prior meetings in each meeting agenda to serve as a means to assess the extent to which previously made decisions had been put into action. In addition, having a representative from the Ministry of Finance attend PAB meetings helped alleviate the financial and payment challenges faced by the project. The project also adjusted its monitoring and tracking strategy to align with its updated implementation plan and logical framework. This adapted monitoring approach facilitated observation of outcome-level indicators and determination of progress in each project activity.

221. Because comprehensive co-financing data for the project was inadequate, the PMU was tasked with the responsibility of overseeing, documenting, and reporting on the results of all co-financed and baseline activities. This endeavor included tracking the amounts of co-financing that had been committed and secured. In addition to the agencies specified in the ProDoc, the project also effectively utilized co-financing resources from the World Bank. Unfortunately, confirmation of commitment was received only from the DoR&D (in-kind contribution) largely because communication between the project team and state-level authorities was insufficient.

222. While the majority of the proposed actions focused primarily on integrating gender considerations into the original project activities, there were also several gender-specific initiatives. These have yet to be implemented. To narrow this gap, however, the project has been actively promoting gender equality and participatory decision-making. It also increased its emphasis on empowering women through capacity-building and other relevant initiatives and adopted plans in this regard. It is worth noting that approximately 60% of the occupants in the buildings in which EC&EE technologies were demonstrated, administrative and hospital facilities, were women. The project enhanced women's access to and control over sustainable energy products and services. Furthermore, the project consistently encouraged IPs to embrace and enhance the project's gender action plan, which is based on real-world insights, and incorporated GESI into project interventions whenever feasible. Although periodic assessments of SES were required, detailed evaluations were not consistently carried out. Nevertheless, the project actively promoted gender equality and empowered women through a variety of measures, including maintaining gender balance in institutions and providing capacity-building.

5.3 Recommendations

Rec #	TE Recommendations	Entity responsible	Time-frame
Category 1: Plan to achieve the outcome based targets			
1	223. Develop a concrete plan for the remaining three months (September 15 to December 15) • *Get the PMU to formulate three-month consolidation plans and the PAB to approve them. These plans must contain a well-defined roadmap encompassing all activities and their respective timelines and costs so that all of the project objectives can be achieved. Schedule weekly meetings in which PMU staff can discuss their individual progress in leading the National Project Director and extend invitations to the UNDP Pacific Office and MCO to participate in strategic discussions and decision-making.* • *Ensure that the remaining timeframe incorporates plans related to gender action, procurement, and monitoring along with the detail consolidation plan.* • *Establish a mechanism to ensure that technical inputs from the BEE specialist continue to contribute to the ongoing development of the project's best practices even after the project concludes. This mechanism should consider the context of EE Officers at the state level, with a focus on their continuing to work until 2025 (para #70).*	*PMU, IP and UNDP*	*Dec 14, 2023 (within the project's tenure)*
Category 2: Disaster risk reduction, involvement of market&insurance and follow EPA			
2	224. Develop and install technologies that can withstand recurrent disasters • *Implement solar and AC systems that are durable enough to withstand tropical storms and typhoons and take into account critical environmental factors that can impact the long-term viability of solar installations.* • *Collaborate with insurance companies to ensure that cost-effective and dependable insurance options are available to enhance the resilience of solar PV systems through risk transfer mechanisms.* • *Provide training sessions in energy efficiency for decarbonization to concerned individuals and organizations in the public and private sectors.* • *Establish a mechanism in line with EPA guidelines to safely manage and dispose of aging AC units and fixtures through a PPP approach which will minimize potential adverse effects on the local environment and the wellbeing of the community (para # 161, 162, and 191).*	*PMU, IP and UNDP*	*By 2024*
Category 3: Co-financing, O&M cost, exit strategy and sustainability plan, expand the scope of PAB			
3	225. Ensure the sustainability of the EC&EE technologies that will be scaled up • *Investigate the possibility of securing additional co-financing from other UN and development partners-driven initiatives that align with the overarching objectives of the NDC, National Energy Plan, and SDGs.* • *Conduct specialized training sessions for local electricians focused on the installation of AC systems and fixtures. Maintain readily available inventories to ensure prompt mobilization when needed, thereby guaranteeing the effective O&M of equipment and fixtures.* • *Compile information on organizations that share international best practices for managing similar technologies and establish connections so that the PAB can access this knowledge.* • *Engage with commercial banks to explore financing options for future EC&EE initiatives.* • *Develop, with the active collaboration of government stakeholders, a well-defined exit strategy as well as a sustainability plan that includes a recommended roadmap for EC&EE technologies.* • *Create a comprehensive handover package containing all knowledge resources and outreach materials, including reports, studies, policy briefs, plans, assessments, and other documents. Distribute both hard copies and digital versions to all government agencies, ensuring that digital copies are appropriately archived in government systems and websites for future reference.* • *Broaden the scope of the PAB by involving officials from the Ministry of Finance, Planning Commission, and state utility offices. Also include representatives from the FSM Chamber of Commerce to represent the private sector and, as a whole, to diversify the PAB's areas of expertise and influence (para # 65, 66, 67, 75, 111, 114, 151, and 154).*	*PMU, IP and UNDP*	*By 2024*
Category 4: HACT and Spot check and systematize the procurement			
4	226. Organize HACT sessions to teach IPs a more systematic way to engage in procurement • *Arrange sessions on HACT and spot checks involving IPs and encompassing all components, techniques, and results.*	*UNDP*	*In regular basis*

	• *Create a system to utilize funds from the national government to expedite project implementation when necessary to keep up the pace of progress. Accompany this approach with the condition that UNDP promptly reimburses the national government (para # 121).*		
Category 5: Capacity building, mainstream EC&EE in school and college curricula			
5	227. Conduct training needs assessments before providing capacity-building to put skills into practice • *Assess training needs and identify any gaps prior to developing a training curriculum, session plans, PowerPoint presentations, and reading materials.* • *Coordinate brief training sessions that include provisions for refresher courses in collaboration with the national government.* • *Create training curricula that incorporates mock exercises and encourage each participant at the end of the training to formulate an action plan demonstrating that he or she can effectively apply the skills taught.* • *Administer pre- and post-training assessments to assess the impact of the project and the changes it brings about.* • *Establish local resource persons through a training-of-trainers program and, following a cascading model, utilize them as resource persons in subsequent training sessions.* • *Advocate for the integration of EC&EE issues into post-secondary education and college curricula (para # 46, and 218).*	*PMU and IP*	*Dec 14, 2023 (within the project's tenure)*
Category 6: Gender action plan, scenario-based gender-responsive planning and costing			
6	228. Operationalize the gender plan by integrating the proposed activities into the revised work plan • *To put the gender equality and gender action plan into practice, evaluate the scheduled activities and incorporate them into the revised work plan.* • *Promote and advocate for the judicious utilization of a scenario-based gender-responsive costing framework during project formulation. Have government stakeholders engaged in GESI-sensitive planning and budgeting use this framework for reference.* • *Arrange workshops to disseminate the scenario-based gender-responsive costing framework to pertinent public and private stakeholders as well as to project staff and members of the PAB.* • *Deliver gender-focused training to enhance stakeholders; understanding of how women and men interact with their local environment through the use of EC&EE technologies.* • *Improve the complaint feedback system by raising awareness among the wider public regarding the availability of a complaint/feedback box and by emphasizing the anonymity and security provisions. Establish committees and protocols for opening the complaint/feedback box and addressing the issues raised (para # 76, 169, 172, 176, and 213).*	*PMU, IP and UNDP*	*In regular basis*
Category 7: Private sector's involvement, capacity building, coordination with development partners, robust EMIS			
7	229. Involve the private sector in EC&EE initiatives • *Encourage the involvement of the private sector in project initiatives by recommending that the GoFSM allocate subsidies to create a supportive investment environment which will facilitate the replication of EC&EE technologies.* • *Foster private-sector engagement in managing EE appliances that contribute to EC&EE initiatives, and get the government to offer its support. Involve the private sector in training, workshops, and meetings to cultivate its willingness to participate in EC&EE markets.* • *Collaborate with various development partners such as the WB, ADB, EU, JICA, and international agencies like the SPC. Organize quarterly learning-and-review workshops to share experiences and best practices as well as to explore potential areas for future collaboration.* • *Allocate resources from the national government to establish a robust EMIS at a broad level in partnership with Pacific-Islands private-sector organizations, the FSM Association of Chambers of Commerce, and the Pohnpei Chamber of Commerce. This initiative aligns with the provisions outlined in the NDCs, SDGs, NDP, and other international commitments of the GoFSM (para #40, 99, 102, and 218).*	*PMU, IP and UNDP*	*By 2024*
Category 8: Documentation of best practices and learning, and knowledge management for replication			
8	230. Document and disseminate best practices and learning • *Create concise case studies that showcase the electricity savings, GHG emission reductions, job creation, and fossil fuel savings associated with EC&EE. These case studies will fortify the strategy for replication.* • *Offer small research grants to university students interested in contributing to research in EC&EE.* • *Produce policy briefs utilizing data from before and after the implementation of EC&EE technologies, transforming them into a valuable resource mobilization toolkit.*	*PMU, IP and UNDP*	*Dec 14, 2023 (within the project's tenure)*

	• *Develop two-pager policy briefs once policies are approved by parliament.* • *Utilize both national and international media platforms to craft brief case studies and video documentaries to disseminate the project's best practices and lessons learned, highlighting the benefits of EE, energy management, and energy savings to encourage the involvement of the private sector and individuals.* • *Utilize various media and communication channels, including the project website, Facebook, and short-form platforms like TikTok, to disseminate fundamental knowledge on EC&EE through daily posts that generate significant interest.* • *Involve more youths, particularly schoolchildren and college students, as part of the formal curricula on climate change mitigation within the project's efforts. Greater involvement aims to impart technical knowledge and increase the reach of these technologies.* • *Share the project's straightforward EC&EE technologies and their ability to reduce electricity bills through a public government monitor/screen installed in Coloniya City.* • *Design and produce diverse promotional materials such as brochures, posters, flyers, informative tips, and case studies, and distribute them nationwide to various target groups, including government decision-makers, the private sector, and the general public.* • *Develop a monitoring plan after thoroughly reviewing the project's results framework. Review the back to office report (BTOR) of each staff member and collect recommendations and action plans as references for further monitoring designed to minimize duplication of work and track previously agreed-upon actions effectively (para # 165, 180, and 189).*		
9	231. Policy support to growth EE&EC initiatives in the future. • *Involve Civil Society Organizations and the media in the development of policies to advocate for policies and achieve policy goals promptly.* • *Develop voluntary EE&EC guidelines.* • *Adopt a PPP model that aligns with FSM's renewable energy sector policy and tackles policy-related obstacles.* • *Promptly endorse these policies to strengthen this sector through collaboration among development partners, financial institutions, and CSOs (para # 35, 73, and 99).*	*PMU, IP and UNDP*	*In regular basis*

5.4 Lessons learned

232. *PAB meetings prove their effectiveness when they incorporate the minutes of the preceding session into the agenda, enabling the evaluation of progress and the formulation of strategies to address issues:* PAB meetings played a pivotal role in ensuring that the project stayed on the right course. These meetings were the most effective when each agenda included the minutes of the previous session, as having them allowed members to assess the progress made in implementing previous decisions. Such evaluations also helped them to identify possible reasons that a decision was not implemented or not completely implemented and, if necessary, to develop action plans. Circulating the PAB's minutes among relevant stakeholders and maintaining a "suggestion log" for their feedback also contributed significantly to the likelihood that decisions would be implemented.

233. *Decentralizing the PAB structure proves advantageous by bridging the gap between state-level issues and the PAB, thereby expediting the effective implementation of PAB decisions:* It has been observed that decentralizing the PAB structure proves advantageous by bridging the gap between state-level issues and the PAB, thereby expediting the effective implementation of PAB decisions. The participation of the Ministry of Finance in PAB meetings helped to mitigate the financial and payment challenges encountered by the project. Furthermore, stakeholders noted that having a representative from the national planning commission added value by enabling both potential co-financing opportunities and the scaling up of the project's best practices and lessons learned.

234. *Followed the practice of a "systematic handover" of skills and knowledge rather than relying on "physical handovers" in order to preserve institutional memory:* To minimize the negative effects of the turnover of UNDP personnel, project staff, and government thematic staff, and to preserve the project's institutional memory, the "systematic handover" of skills and knowledge to bridge coordination gaps proved to be highly effective and far more effective than relying solely on "physical handovers' from departing staff to new team members.

235. *The delay in selecting PAB members leads to postponed PAB meetings, consequently impacting project progress, unless we take proactive measures to mitigate these delays, the project's advancement will be affected:* Delays in the selection of PAB members by some states delayed the initial PAB meeting, postponing its convention until a full year after the project had commenced. This prolonged delay hindered the project's ability to make strategic decisions and initiate implementation during its initial stages. To circumvent such delays and

challenges, the project could have increased the number of PAB members from relevant agencies (Ministry of Finance, Planning commission and CSOs) and conducted meetings without waiting for representatives from each and every State. The late joiners can then catch up on what they missed by reading the minutes of all meetings held in their absence. Such an approach is far more efficient as it allows for early action.

236. *Intermittent adaptability in making decisions tailored to the context is essential for promptly resolving procurement challenges and enhancing efficiency by swiftly assessing vendors and contractors within the market:* The project learned that occasional flexibility in making context-specific decisions is necessary in order to resolve procurement bottlenecks swiftly. For instance, while the NIM mandated that all procurement be handled exclusively by the IP/PMU, without UNDP involvement, the PMU in fact experienced delays in procurement. To hasten the process, then, UNDP stepped in to help. It was realized that adopting an adaptive management approach tailored to the local context can effectively address such standstills. Another way to increase efficiency is to conduct a rapid market assessment of vendors and contractors before issuing a tender for procurement so that the program can assess their relative capacities and inventories of available equipment and fixtures.

237. *The greater the simplicity of project outputs, the more attainable the project's desired outcomes become within a limited timeframe, emphasizing the importance of having SMART indicators for these outputs:* To achieve a project's desired outcomes within a constrained timeframe requires that outputs are SMART: specific, measurable, achievable, relevant, and time-bound. They should be straightforward and their progress trackable. If, as was the case in this project, some outputs appear unusually comprehensive in scope, resembling outcomes rather than mere outputs or beyond the direct control of the project, they should be rewritten. Project outputs need to be made as simple as possible before the project is endorsed.

238. *Engaging Civil Society Organizations and the media in the policy formulation process can amplify the effectiveness of a policy, especially in terms of ensuring ongoing policy advocacy and the timely realization of policy objectives:* The process of developing and implementing policies is inherently intricate and time-consuming, yet it holds significant importance for the sustainability of initiatives. It has been recognized that involving CSOs in the policy formulation process can enhance the value of any given policy, particularly in terms of securing continuous policy advocacy. The engagement of CSOs ensures active stakeholder participation and support; cooperation in policy development; and the rational enforcement of policies. It is important to note that policy advocacy that espouses a process approach may require considerable time.

239. *The partnership between public and private sector organizations has created numerous opportunities for reciprocal learning while simultaneously harnessing new technologies and innovations:* The participation of government officials in conjunction with private-sector entities (especially hardware suppliers, commercial building stakeholders, and engineering firms) and the management and administration of designated pilot public-sector buildings within the FSM Energy Group created numerous opportunities for mutual learning. This collaboration allowed stakeholders to exchange concerns, best practices, and lessons learned, and thereby contributed to the long-term development of the GoFSM energy sector. The project learnt that involving the private sector was crucial for harnessing new technology and innovation, as is mandated by the SFDRR.

240. *Maintaining regular communication and fostering collegial relations among pertinent stakeholders facilitated the smooth execution of plans and mitigated potential obstacles and standstills:* It was observed that the involvement of a 'procurement expert' not only ensured quality control but also enhanced transparency and governance in procurement and services. Furthermore, actively engaging with vendors and contractors, adjusting the cost estimates of certain legitimate bids to prevent cancellations, and reissuing bids to accommodate vendors' and contractors' concerns can bolster the interest of the private sector in the project's activities.

241. *Choosing strategically significant public buildings of substantial size for demonstration purposes enhances the effectiveness of technology transfer and has played a pivotal role in disseminating knowledge:* Selecting large, strategically significant public buildings such as administrative offices, hospitals, educational institutions, and radio stations for demonstration purposes adds value to technology transfer. These buildings attract a substantial number of visitors, allowing for knowledge to be shared, concerns to be discussed, and ideas to be discussed. Having public-sector buildings serve as models played a pivotal role in disseminating knowledge down to the level of the individual household. The project realized that the scalability of technologies was contingent upon their simplicity, affordability, and ease of maintenance.

242. *Superficial or symbolic participation of women does not lead to substantial outcomes; instead, it's crucial for women to be actively engaged in meaningful ways within governance mechanisms:* In order to incorporate gender

considerations into project activities and promote women's empowerment throughout the implementation phase, the project discovered that the following strategies are efficacious: (i) maintaining a gender balance within institutions, committees, and boards, (ii) enforcing affirmative action to enhance women's participation in socio-political structures and project activities, (iii) involving more women in capacity-building initiatives to boost their self-confidence, and (iv) engaging women in review-and-reflection sessions and decision-making processes. It is important to note that the tokenistic involvement of women does not yield significant results; instead, women need to be meaningfully involved in governance mechanisms.

243. *Having a Ministry of Finance representative as a member of the PAB contributed to the resolution of bottlenecks concerning finance and payments:* The payment delays within the NIM framework frequently clash with current national regulations. It has been learned that involving Ministry of Finance representatives in PAB meetings has assisted in addressing this issue by making slight adjustments to the existing rules and protocols, thereby mitigating the financial and payment difficulties faced by the project.

244. *The efficacy of co-financing heavily depends on established procedures, protocols, and tracking mechanisms:* The tracking of co-financing is limited. It has been observed that the effectiveness of co-financing greatly relies on the extent of stakeholders' involvement in the PAB meeting and the regular sharing of project updates, emphasizing how the co-financing amount can generate synergistic impacts, and along with concrete mechanisms for tracking co-financing, such as defined procedures, processes, and tracking files/tools.

245.

Annexes

Annex-1: TE ToR (excluding ToR annexes)

Title: Micronesia Public Sector Buildings Energy Efficiency (MPSBEE) Project
Type of Contract: International Consultant
Start and End date: 20 July – 30 September 2023
Location: Field mission to Federated States of Micronesia
Duration of the Contract: 30 working days over 2 months

1. INTRODUCTION

In accordance with UNDP and GEF M&E policies and procedures, all full- and medium-sized UNDP supported GEF-financed projects are required to undergo a Terminal Evaluation (TE) at the end of the project. This Terms of Reference (ToR) sets out the expectations for the TE of the medium-sized project titled **Micronesia Public Sector Buildings Energy Efficiency (MPSBEE) project (PIMS 5997)** implemented through the Division of Energy, Department of Resources and Development (DE/DRD). The project started on 14 December 2020 and is in its 3rd year of implementation. The TE process must follow the guidance outlined in the document 'Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects' (http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf).

2. PROJECT BACKGROUND AND CONTEXT

FSM (the Federated States of Micronesia) spreads over 2,900 kms and is located in the western Pacific Ocean just north of the equator and east of the Philippines and north of the island of New Guinea. FSM is comprised of four semi-autonomous states (Chuuk, Kosrae, Pohnpei, and Yap) and includes 607 islands (74 of which are inhabited). As of 2016, FSM had a population of 104,934 and a GDP of US$322 million, for a GDP per capita of US$3,068. Each of the 4 states has its own executive and legislative bodies and has considerable autonomy to manage its domestic affairs. Each State has its own development strategy, while the national government (based in Palikir on Pohnpei Island) provides an integrated perspective and vision for the whole of the FSM.

FSM has limited natural resources, and exports are heavily concentrated on its marine resources. Most of FSM's commodities (esp. petroleum products and a very high proportion of food) are imported, and this import dependency exposes the country to global economic shocks and price spikes. Like other Pacific Islands Countries (PICs) petroleum fuels are largely used for electricity generation and transportation. Transport fuel is mostly used for marine services since land transportation is modest given FSM's small landmass in each occupied island and the general lack of major commercial land-based economic based activities. Some LPG is used for cooking. Energy is one of the four main development priorities of FSM, alongside the development of marine resources, agriculture and tourism.

The objective of the MPSBEE project is the improved application of energy conserving and energy efficient (EC&EE) techniques and practices in the design, retrofit, and ongoing O&M of public sector buildings in FSM by addressing to various barriers including policy/regulatory/institutional barriers, energy monitoring and reporting (information) barriers, technical barriers, and capacity development and financial barriers.

By demonstrating, replicating, monitoring and publicizing the targeted 50% reductions in public sector buildings' energy use, the MPSBEE project was designed to contribute towards the realization of FSM's national target of a 50% improvement in EE by 2020. As electricity is unavoidable expensive in the FSM (2018 tariffs are 39 – 77 US cents/kWh), it would also be cost effective for the private sector to learn from and replicate the best commercially available ESMs (esp. for ventilation, cooling, lighting and hot water supply) that will be demonstrated, replicated, monitored, documented and publicized by MPSBEE for FSM's public sector buildings.

The goal of the MPSBEE project was to improve specific energy consumption and reduced GHG emissions in the buildings sector of the country. The project is working to achieve the following outcomes to realize the goal.

Outcome 1: Enforcement of policies and guidance on the energy efficient and energy conserving design, retrofit, operation and maintenance of public sector buildings
Outcome 2: Enhanced management and monitoring of the energy performance of public sector buildings
Outcome 3: Increased Application of EC&EE technologies in public sector buildings and facilities

Outcome 4: Enhanced awareness and knowledge on the cost-effective application of EC&EE technologies in public sector buildings

The project document was signed on 14 December 2020 to implement for three years. The project implementing partner is Division of Energy, Department of Resources and Development (DE/DRD) of the FSM national government.

3. TE PURPOSE

The Terminal Evaluation (TE) report will assess the achievement of project results against what was expected to be achieved and draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming. The TE report promotes accountability and transparency and assesses the extent of project accomplishments.

Further to this, the objectives of the evaluation will be to:

- assess the achievement of project results supported by evidence (i.e., progress of project's outcome targets)
- assess the contribution and alignment of the project to relevant national development plans or environmental policies
- assess the contribution of the project results towards the relevant outcome and output of the Multi Country Programme Document (MCPD) & United Nation Sustainable Development Cooperation Framework (UNSDCF)
- assess any cross cutting (poverty alleviation, improved governance, climate change mitigation and adaptation, disaster prevention and recovery, human rights, capacity development, South-South cooperation, knowledge management, volunteerism, etc., as relevant) and gender results using the gender scale effective scale (GRES)
- examination on the use of funds and value for money
- assess the impact of COVID19 on project's implementation
- and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.

4. TE APPROACH & METHODOLOGY

The TE report must provide evidence-based information that is credible, reliable, and useful. All relevant evidentiary documents must be presented/provided to the TE evaluators to confirm the reported results of the project's baseline/co-financed and incremental activities, delivery of agreed component outputs and levels of achievement of the end-of-project targets of the objectively verifiable indicators that are set out in the project results framework (log frame). It is important to also provide explanations/justifications of the attribution of any indirect results (e.g., energy savings, GHG emission reductions, etc.) of parallel/associated activities of the project. In this regard, the TE Team must state in the TE report if the team has checked, evaluated, verified, and confirmed all the evidentiary documents during the terminal evaluation and provide comments regarding, and where necessary, pertinent recommendations to improve, the credibility, reliability, and usefulness of such documents.

The Project Management Unit (PMU) and the UNDP Pacific Office must provide the TE team all relevant sources of information including documents prepared during the preparation phase (i.e. PIF, UNDP Initiation Plan, UNDP Social and Environmental Screening Procedure/SESP, the Project Document, project reports including annual PIRs, project budget revisions, lesson learned reports, national strategic and legal documents, and any other materials that the team considers useful for this evidence-based evaluation. The TE team will review these sources of information documents, as well as the baseline and midterm GEF focal area Core Indicators/Tracking Tools submitted to the GEF at the CEO endorsement and midterm stages and the terminal Core Indicators/Tracking Tools that must be completed before the TE field mission begins.

The TE team is expected to follow a participatory and consultative approach ensuring close engagement with the Project Team, government counterparts (the GEF Operational Focal Point), Implementing Partners, the UNDP Country Office(s), the Regional Technical Advisor, direct beneficiaries, and other stakeholders.

Engagement of stakeholders is vital to a successful TE. Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to Division of Energy, Department of

Resources and Development (DE/DRD), executing agencies, senior officials and task team/component leaders, key experts and consultants in the subject area, Project Board, project beneficiaries, academia, local government and CSOs, etc.

Stakeholders:
1. MPSBEE Project Management Unit
2. Division of Energy
3. Department of Resources and Development
4. Kosrae State Government
5. Pohnpei State Government
6. Chuuk State Government
7. Yap State Government
9. Kosrae Utilities Authority
10. Pohnpei Utilities Corporation
11. Chuuk Public Utility Corporation
12. Yap State Public Service Corporation
13. Kosrae High School
14. Kosrae Elementary School
15. Pohnpei State Hospital
16. Chuuk High School
17. Chuuk State Hospital
18. Yap Radio Station
19. The Pacific Community
20. Pohnpei Women's Group
21. Chuuk Women's Group

Additionally, the TE team is expected to conduct field missions to the Federated States of Micronesia, including some of the following project sites:
1. Kosrae High School
2. Kosrae Elementary School
3. Pohnpei State Hospital
4. Pohnpei State Administration Building
5. Chuuk High School
6. Chuuk State Hospital
7. Yap Radio Station
8. Yap State Administration Building

The specific design and methodology for the TE should emerge from consultations between the TE team and the above-mentioned parties regarding what is appropriate and feasible for meeting the TE purpose and objectives and answering the evaluation questions, given limitations of budget, time and data. The TE team must use gender-responsive methodologies and tools and ensure that gender equality, women's empowerment, as well as other cross-cutting issues and SDGs are incorporated into the TE report.

The final methodological approach including interview schedule, field visits and data to be used in the evaluation must be clearly outlined in the TE Inception Report and be fully discussed and agreed between UNDP, stakeholders, and the TE team. Sampling of interviewees to ensure gender parity and representation.
The final report must describe the full TE approach taken and the rationale for the approach making explicit the underlying assumptions, challenges, strengths and weaknesses about the methods and approach of the evaluation.

Ensure that the recommendations are aligned with the key findings. Recommendations also need to be strategic, realistic and within the context of the project. Establish at least 5-7 key strategic recommendations.

5. DETAILED SCOPE OF THE TE

The TE will assess project performance against expectations set out in the project's Logical Framework/Results Framework (see ToR Annex A). The TE will assess results according to the criteria outlined in the Guidance for TEs of UNDP-supported GEF-financed Projects (http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf).

The Findings section of the TE report will cover the topics listed below. A full outline of the TE report's content is provided in ToR Annex C.
The asterisk "(*)" indicates criteria for which a rating is required.

Findings

i. Project Design/Formulation

- National priorities and country driven ness
- Theory of Change
- Gender equality, inclusivity and women's empowerment
- Social and Environmental Standards (Safeguards)
- Analysis of Results Framework: project logic and strategy, indicators
- Assumptions and Risks
- Lessons from other relevant projects (e.g., same focal area) incorporated into project design
- Planned stakeholder participation
- Linkages between project and other interventions within the sector
- Management arrangements

Evaluate whether the project design (e.g., approach, activities, and outputs) was adequate/sufficient and appropriate to achieve the project objective and outcomes that were set out in the project results framework.

ii. Project Implementation

- Adaptive management (approved changes to the project design and project outputs during implementation, whether such changes were adequately and properly implemented, and impacts/results of the implemented changes)
- Actual stakeholder participation and partnership arrangements (in addition, also cite issues/challenges encountered, impacts of such issues/challenges on project implementation and results; and the resolution of these)
- Project Finance and Co-finance (evaluate actual project financing, actual realization of committed co-financing, and any leveraged financing – provide evidentiary documents to support the evaluation)
- Monitoring & Evaluation: design at entry (*), implementation (*), and overall assessment of M&E (*)
- Implementing Agency (UNDP) (*) and Executing Agency (*), overall project oversight/implementation and execution (*)
- Risk Management, including Social and Environmental Standards (Safeguards)

Evaluate whether the actual project implementation did or did not facilitate the provision of the necessary resource inputs for the implementation of project activities and the delivery of all the required project outputs.

iii. Project Results

- Assess the achievement of outcomes against indicators by reporting on the level of progress for each objective and outcome indicator at the time of the TE and noting final achievements. Evaluate the following: (a) whether all the approved project outputs were delivered. These include outputs in the original project design and other approved outputs that were included based on adaptive management; (b) how these outputs contributed to the achievement of the end-of-project targets of the project; and (c) actual resource inputs that were utilized to deliver each output.
- Evaluate the results of the project activities (i.e., GEF-funded and baseline/co-financed activities that were carried out by project partners) that are contributing towards the end-of-project target of the objective indicator and each outcome indicator. This may also include monitored results from indirect activities that were facilitated, enabled, or influenced by the MPSBEE Project's activities. The relevant evidentiary documents on these activities must be evaluated to verify and confirm potential attribution of the results to the MPSBEE Project.
- Relevance (*), Effectiveness (*), Efficiency (*) and overall project outcome (*) - For "effectiveness," evaluate to what extent the barriers that the project is designed to remove were actually removed.
- Sustainability: financial (*) , socio-political (*), institutional framework and governance (*), environmental (*), overall likelihood of sustainability (*) (*) – For overall likelihood of sustainability, evaluate whether the removed barriers will recur or not, and suggest ways of ensuring that the removed barriers will not recur.
- Country ownership
- Gender equality and women's empowerment

- Cross-cutting issues (poverty alleviation, improved governance, climate change mitigation and adaptation, disaster prevention and recovery, human rights, capacity development, South-South cooperation, knowledge management, volunteerism, etc., as relevant)
- GEF Additionality
- Catalytic Role / Replication Effect
- Progress to impact

One important issue that must be considered in the reported results that are contributing to the achievement of the project targets is their attribution to the MPSBEE Project. Make sure that all declared results are attributable to the Project. Where necessary, explain the attribution or non-attribution.

Main Findings, Conclusions, Recommendations and Lessons Learned

- The TE team will include a summary of the main findings of the TE report. Findings should be presented as statements of fact that are based on analysis of the data, and evidentiary documents. One important issue that must be considered in the reported results that are contributing to the achievement of the project targets is their attribution to the MPSBEE Project. Make sure that all declared results are attributable to the Project. Where necessary, explain the attribution or non-attribution.
- The section on conclusions will be written in light of the findings. Conclusions should be comprehensive and balanced statements that are well substantiated by evidence and logically connected to the TE findings. They should highlight the strengths, weaknesses, and results of the project, respond to key evaluation questions, and provide insights into the identification of and/or solutions to important problems or issues pertinent to project beneficiaries, UNDP and the GEF, including issues in relation to gender equality and women's empowerment.
- Since the MPSBEE Project strategy is barrier removal, one of the main conclusions of the TE must be on the extent of barrier removal that the Project has achieved. Explain in detail (based on the project results) for each project component of the barrier(s) is/are removed, and to what extent the barrier removal was achieved.
- Recommendations should provide concrete, practical, feasible and targeted recommendations directed to the intended users of the evaluation about what actions to take and decisions to make. The recommendations should be specifically supported by the evidence and linked to the findings and conclusions around key questions addressed by the evaluation.
- The TE report should also include lessons that can be taken from the evaluation, including best practices in addressing issues relating to relevance, performance and success that can provide knowledge gained from the particular circumstance (programmatic and evaluation methods used, partnerships, financial leveraging, etc.) that are applicable to other GEF and UNDP interventions. When possible, the TE team should include examples of good practices in project design and implementation.
- It is important for the conclusions, recommendations and lessons learned of the TE report to incorporate gender equality and empowerment of women.

The TE report will include an Evaluation Ratings Table, as shown below:

ToR Table 2: Evaluation Ratings Table for Micronesia Public Sector Buildings Energy Efficiency (MPSBEE)

Monitoring & Evaluation (M&E)	Rating[22]
M&E design at entry	
M&E Plan Implementation	
Overall Quality of M&E	
Implementation & Execution	**Rating**
Quality of UNDP Implementation/Oversight	
Quality of Implementing Partner Execution	
Overall quality of Implementation/Execution	
Assessment of Outcomes	**Rating**
Relevance	
Effectiveness	
Efficiency	

[22] Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight & Execution, Relevance are rated on a 6-point scale: 6=Highly Satisfactory (HS), 5=Satisfactory (S), 4=Moderately Satisfactory (MS), 3=Moderately Unsatisfactory (MU), 2=Unsatisfactory (U), 1=Highly Unsatisfactory (HU). Sustainability is rated on a 4-point scale: 4=Likely (L), 3=Moderately Likely (ML), 2=Moderately Unlikely (MU), 1=Unlikely (U)

Overall Project Outcome Rating	
Sustainability	Rating
Financial resources	
Socio-political/economic	
Institutional framework and governance	
Environmental	
Overall Likelihood of Sustainability	

6. TIMEFRAME

The total duration of the TE will be approximately *30 working days* over a time period of 8 weeks starting on 20 July 2023. The tentative TE timeframe is as follows:

Timeframe	Activity
July 05	Application closes – GPN Roster
July 10	Selection of TE team
July 15	Preparation period for TE team (handover of documentation)
July 20 (3 days)	Document review and preparation of TE Inception Report
(July 25 (4 days	Finalization and Validation of TE Inception Report; latest start of TE mission
(July 28- August 10) 12 days	TE mission: virtual stakeholder meetings, interviews.
Aug 17	Mission wrap-up meeting & presentation of initial findings; earliest end of TE mission
Aug 25	Preparation of draft TE report
Aug 30	Circulation of draft TE report for comments
Sep 5	Incorporation of comments on draft TE report into Audit Trail & finalization of TE report
Sep 20	Preparation and Issuance of Management Response
Sep 25	Concluding Stakeholder Workshop (optional)
Sep 26	Expected date of full TE completion

Options for site visits should be provided in the TE Inception Report.

7. TE DELIVERABLES

#	Deliverable	Description	Timing	Responsibilities
1	TE Inception Report	TE team clarifies objectives, methodology and timing of the TE	No later than 2 weeks before the TE mission: *(by 20 July*	TE team submits Inception Report to Commissioning Unit and project management
2	Presentation	Initial Findings	End of TE mission: *(17 August)*	TE team presents to Commissioning Unit and project management
3	Draft TE Report	Full draft report *(using guidelines on report content in ToR Annex C)* with annexes	Within 3 weeks of end of TE mission: *(Aug 30)*	TE team submits to Commissioning Unit; reviewed by RTA, Project Coordinating Unit, GEF OFP
5	Final TE Report* + Audit Trail	Revised final report and TE Audit trail in which the TE details how all received comments have (and have not) been addressed in the final TE report *(See template in ToR Annex H)*	Within 1 week of receiving comments on draft report: *(by 5 Sep)*	TE team submits both documents to the Commissioning Unit

*All final TE reports will be quality assessed by the UNDP Independent Evaluation Office (IEO). Details of the IEO's quality assessment of decentralized evaluations can be found in Section 6 of the UNDP Evaluation Guidelines.[23]

8. TE ARRANGEMENTS

The principal responsibility for managing the TE resides with the Commissioning Unit. The Commissioning Unit for this project's TE is *the UNDP Multi Country Office's Management Performance and Oversight (MPO) Unit. This is in collaboration with the Regional Technical Advisory for clearance and approval of the deliverables.*

[23] Access at: http://web.undp.org/evaluation/guideline/section-6.shtml

The Commissioning Unit will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the TE team. The Project Team will be responsible for liaising with the TE team to provide all relevant documents, set up stakeholder interviews, and arrange field visits.

9. TE TEAM COMPOSITION

An independent international evaluator will conduct the TE. The evaluator will be responsible for the overall assessment of the project results and improve sustainability of project gains including design and writing of the TE Inception Report, conduct the TE mission, and write the final TE report. The evaluator will also work with the Project Team in developing the TE itinerary of the mission including meeting appointments and schedules
The evaluator cannot have participated in the project preparation, formulation and/or implementation (including the writing of the project document), must not have conducted this project's Mid-Term Review and should not have a conflict of interest with the project's related activities.

The selection of evaluator will be aimed at maximizing the overall "team" qualities in the following areas:

Education

- Master's degree in Engineering, preferably in Energy, Electrical or Mechanical or other closely related field; Additional training in Renewable Energy and Energy Efficiency including Climate Change related fields is an advantage.

Experience

- Relevant experience with results-based management evaluation methodologies.
- Experience applying SMART indicators and reconstructing or validating baseline scenarios.
- Competence in adaptive management, as applied to *energy efficiency*
- Experience in evaluating projects.
- Experience working in *the Pacific*
- Experience in relevant technical areas for at least *10 years.*
- Demonstrated understanding of issues related to gender with experience in gender responsive evaluation and analysis.
- Excellent communication skills.
- Demonstrable analytical skills.
- Project evaluation/review experience within the United Nations system will be considered an asset.

Language

- Fluency in written and spoken English.

10. EVALUATOR ETHICS

The TE team will be held to the highest ethical standards and is required to sign a code of conduct upon acceptance of the assignment. This evaluation will be conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluation.' The evaluator must safeguard the rights and confidentiality of information providers, interviewees, and stakeholders through measures to ensure compliance with legal and other relevant codes governing collection of data and reporting on data. The evaluator must also ensure security of collected information before and after the evaluation and protocols to ensure anonymity and confidentiality of sources of information where that is expected. The information knowledge and data gathered in the evaluation process must also be solely used for the evaluation and not for other uses without the express authorization of UNDP and partners.

11. PAYMENT SCHEDULE

- 20% payment upon satisfactory delivery of the final TE Inception Report and approval by the Commissioning Unit
- 40% payment upon satisfactory delivery of the draft TE report to the Commissioning Unit
- 40% payment upon satisfactory delivery of the final TE report and approval by the Commissioning Unit and RTA (via signatures on the TE Report Clearance Form) and delivery of completed TE Audit Trail

Criteria for issuing the final payment of 40%[24]:

[24] The Commissioning Unit is obligated to issue payments to the TE team as soon as the terms under the ToR are fulfilled. If there is an ongoing discussion regarding the quality and completeness of the final deliverables that cannot be resolved between the Commissioning Unit and the TE team, the Regional M&E Advisor and Vertical Fund Directorate will be consulted. If needed, the Commissioning Unit's senior management, Procurement Services Unit and Legal Support Office will be notified as well so that a decision can be made about whether or not to withhold payment of any amounts that may be due to the evaluator(s),

- The final TE report includes all requirements outlined in the TE TOR and is in accordance with the TE guidance.
- The final TE report is clearly written, logically organized, and is specific for this project (i.e., text has not been cut & pasted from other TE reports).
- The Audit Trail includes responses to and justification for each comment listed.

Annex-2: TE Mission itinerary

Table 5: Indicative schedule of field mission

Day	Date	Key task	Coordination responsibility	Remarks
August 27-29: Travel to Pohnpei from Consultant's Home Country[25]				
Tuesday-Friday	August 30 to Sep 2, 2023	1) Organized meeting with EE officer at Yap 2) Obtained comprehensive updates on the project through PowerPoint presentations (*key accomplishments aligned with the project's log-frame, identified challenges and constraints, corresponding mitigation strategies, outstanding tasks according to the project's work plan, and the proposed course of action for the future)* 3) Received the conclusive roster of stakeholders who are to be visited or interviewed. 4) Observed the project's key infrastructures sites 5) Interviewed the stakeholders as per the plan 6) Worked with PMU staff to fill the data gaps	PMU team	
Sunday – Thursday	Sep 3-7, 2023	1) Organized meeting with EE officer at Yap 2) Obtained comprehensive updates on the project through PowerPoint presentations (*key accomplishments aligned with the project's log-frame, identified challenges and constraints, corresponding mitigation strategies, outstanding tasks according to the project's work plan, and the proposed course of action for the future)* 3) Received the conclusive roster of stakeholders who are to be visited or interviewed. 4) Observed the project's key infrastructures sites 5) Interviewed the stakeholders as per the plan Worked with PMU staff to fill the data gaps	PMU team	
Thursday	Sep 7	Travel back to Nepal		

suspend or terminate the contract and/or remove the individual contractor from any applicable rosters. See the UNDP Individual Contract Policy for further details:
https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PSU_Individual%20Contract_Individual%20Contract%20Policy.docx&action=default

[25] This is only indicative and subject to change based on the country context and local situation. However, sooner the better.

Annex-3: List of persons interviewed

a. Yap State

Sn	Name	Title	Office	Email address
1	Katherine Gisog	State Grant Writer	Office of Planning & Budget	kattinowgisog@gmail.com
2	Thomas Pong	Public Sector Infrastructure Development Coordinator	Office of Planning & Budget	Thomaspong84@gmail.com
3	Krystal Tamngug	Administrative Officer	Office of Planning & Budget	tamngugk@gmail.com
4	Devilin Kinian	Program Presenter	Radio Station	dfanapin@gmail.com
5	Casey Jibemai	Program Supervisor	Radio Station	cjibemai@gmail.com
6	Irene Laabrug	Chief of Finance	Office of Administrative Services	ilaabrug@gmail.com
7	Patricia Ruecho	Administrative Officer	Office of Administrative Services	paruoasao@gmail.com
8	Leelkan Southwick	Director	Dept. of Resource & Development	lpsouthwick@gmail.com
9	Sebastian Tamagken	Chief of Media and Protocol and "Office"	Yap State Radio Station	s.tamagken@gmail.com

b. Pohnpei State

Sn	Name	Title	Office	Email address
1	Hubert Yamada	Director, Pohnpei R&D and PAB member	Pohnpei R&D	huberty08@yahoo.com
2	Cynthia Ehmes	Acting Secretary/GEF focal point	Department of Environment and Climate Change Management (DECEM)	Cynthia.Ehmes@decem.gov.fm
3	Wincener J David	Administrator	Pohnpei State Hospital	WDavid@fsmhealth.fm
4	Peterson SAM	Commissioner	Pohnpei radio station	Pohnpeiradio@outlook.com
5	Luciano Abraham	Director	Department of land	1485sano1957@gmail.com
6	Tahker Abraham	Administrator	Office of fisheries and aquaculture	
7	Timoci Romanu	Chief	Pohnpei public defender	fsmdefender@mail.fm
8	Faustino Yarofaisug	FSM R&D	Assistant Secretary-Energy Division	fyarofaisug@rd.gov.fm

c. UNDP

Sn	Name	Title	Office	Email address
1	Rowena Dimaampao	Head of procurement	UNDP Pacific Office	rowena.dimaampao@undp.org
2	Sergio Quiros Navas	RTA/NCE	UNDP	sergio.quiros.navas@undp.org
3	Krit Manator	Programme Associate/NCE	UNDP	krit.manator@undp.org
4	Yoko Ebisawa	Programme Officer	UNDP	yoko.ebisawa@undp.org

d. PMU staff

1	Renee Aliksa	MPSBEE	Finance & Admin Officer	raliksa@rd.gov.fm	
2	Chiichii Vihiga	MPSBEE	Building Energy Efficiency Specialist	cvihiga@rd.gov.fm	
3	Darlynn Henry	MPSBEE	Project Manager	dhenry@rd.gov.fm	

4	Kesdy Ladore	MPSBEE	Energy Efficiency Officer-Pohnpei state	krayladore@gmail.com	
5	Boone Rain	MPSBEE	Energy Efficiency Officer-Chuuk state	boonesrainmidway1981@gmail.com	
6	Livingstone James	MPSBEE	Energy Efficiency Officer-Kosrae state	ljames@rd.gov.fm	
7	Julius Tun	MPSBEE	Energy Efficiency Officer-Yap state	jtun@rd.gov.fm	

Annex-4: List of documents reviewed

Sn	Document
1	Project Identification Form (PIF)
2	UNDP Initiation Plan
3	Final UNDP-GEF Project Document with all annexes
4	CEO Endorsement Request
5	UNDP Social and Environmental Screening Procedure (SESP) and associated management plans (if any)
6	Inception Workshop Report
7	Mid-Term Review report and management response to MTR recommendations
8	All Project Implementation Reports (PIRs)
9	Progress reports (quarterly, semi-annual, or annual, with associated workplans and financial reports)
10	Oversight mission reports
11	Minutes of Project Board Meetings and of other meetings (i.e., Project Appraisal Committee meetings)
12	GEF Tracking Tools (from CEO Endorsement, midterm, and terminal stages); the results at terminal stage to be converted into GEF Core Indicator
13	GEF/LDCF/SCCF Core Indicators (from PIF, CEO Endorsement, midterm, and terminal stages); for GEF-6 and GEF-7 projects only
14	Financial data, including actual expenditures by project outcome, including management costs, and including documentation of any significant budget revisions
15	Co-financing data with expected and actual contributions broken down by type of co-financing, source, and whether the contribution is considered as investment mobilized or recurring expenditures
16	Reports on the results of subsumed baseline/co-financed activities (that are included in the project log frame) carried out by project partners.
17	Reports on the results of indirect activities that were facilitated, enabled, or influenced by the MPSBEE Project's activities (e.g., capacity building activities, promotional campaigns, information dissemination, knowledge products dissemination, etc.). NOTE: Analyze evidentiary documents on these activities to verify and confirm potential attribution of the results to the MPSBEE Project.
18	Audit reports
19	Electronic copies of project outputs (booklets, manuals, technical reports, articles, etc.)
20	Sample of project communications materials
21	Summary list of formal meetings, workshops, etc. held, with date, location, topic, and number of participants
22	Any relevant socio-economic monitoring data, such as average incomes / employment levels of stakeholders in the target area, change in revenue related to project activities
23	List of contracts and procurement items over ~US$5,000 (i.e., organizations or companies contracted for project outputs, etc., except in cases of confidential information)
24	List of related projects/initiatives contributing to project objectives approved/started after GEF project approval (i.e., any leveraged or "catalytic" results)
25	Data on relevant project website activity – e.g., number of unique visitors per month, number of page views, etc. over relevant time period, if available
26	UNDP Country Programme Document (CPD)
27	List/map of project sites, highlighting suggested visits
28	List and contact details for project staff, key project stakeholders, including Project Board members, RTA, Project Team members, and other partners to be consulted
29	Project deliverables that provide documentary evidence of achievement towards project outcomes, including evidentiary documents supporting the attribution of declared/claimed results to the Project.

Annex-5: List of additional tables

Table 1: Project Progress as of Aug 31, 2023

Parameter	Yap	Pohnpei	Chuuk	Kosrea
PEA	Completed	Completed	Completed	Completed
Approval of PEA	Completed	Completed	Completed	Completed
Procurement of energy-efficient equipment and fixtures	98%, 4 unit of solar heater for hospital to be managed	80%, 20% Sep as contracts has been awarded and equipment/fixtures are in place for installation	To be completed by Sep as it has to be done by same contractor, who is doing at Pohnpei.	Contract is awarded, and equipment are already shipped from the Philippines
Installation work	98%	80%	By the end of October	By the end of October
EMRS in 30 buildings	By the end of October	By the end of October	By the end of October	By the end of October

*Note: * The Pohnpei State government made last-minute alterations to the plans for the building due to its deteriorated physical condition, necessitating renovation.*

Table 2: Target vs. achievements (as of Sep 15, 2023)

Parameter	Yap		Pohnpei		Chuuk		Koserai	
	Planned	Achievement	Planned	Achievement	Planned	Achievement	Planned	Achievement
Admin buildings	1	1	8	7	-	-	-	-
Hospitals	1	60%	1	1	1	1	-	-
Schools			-	-	1		2	-
Radio Stations	1	1	1	1	-	-	-	-
Other facilities	-	-	-	-	-	-	-	-

Table 3: Planned vs. actual dates of key human resource management

Sn	Staff position	Planned recruitment (MM/YY)	Actual recruitment (MM/YY)	Months difference
1	Project Manager	12/2020	03/2021	3
2	Admin Finance Officer	12/2020	03/2020	3
3	BEE Specialist	12/2020	04/2022	16
4	EE Officer Yap	12/2020	10/2021	10
5	EE Officer Pohnpei	12/2020	11/2021	11
6	EE Officer Chuuk	12/2020	05/2022	17
7	EE Officer Koserae	12/2020	05/2022	17

The output wise budget allocation and their corresponding expenditure is presented in the table 3.

Table 4: Output wise allocation of financial resources by MPSBEE project

Outcome	Output	Planned budget	Actual expenditure	Reason for variation
1	1.1	36,000.00	12,333.43	Delay in Hiring
	1.2	22,000.00	68,416.04	1st year advance was only under Outcome 1 & 2 & PMC
	1.3	12,100.00	6490,00	Some expenses are still pending
	1.4	4,900.00	2,043.89	Still pending
2	2.1	75,000.00	26,951.00	Still pending
	2.2	68,000.00	81,605.15	We overdrawn by 2nd year
	2.3	9,600.00	3,000.00	Some expenses are still pending
	2.4	35,000.00	8,000.00	Will be implemented soon
	2.5	7,400.00	4,371.08	Some expense are still pending
3	3.1	75,000.00	38,323.14	Soon to be implemented
	3.2	105,000.00	50,974.26	Still pending
	3.3	60,000.00	31,114.60	Still pending

	3.4	100,000.00		No activity done yet
	3.5	804,000.00	763,778.47	Equipment are already ordered and payments are awaiting installation.
	3.6	3,000.00	??	No activity yet
	3.7	3,000.00	344.57	Will be used up soon
	3.8	20,000.00	17,700.00	Promotional items are printed already for pub. Awareness
	3.9	30,000.00	??	No activity yet
4	4.1	22,500.00	46,479.03	
	4.2	26,500.00	26,069.50	
	4.3	15,400.00	4,400.00	
	4.4	10,000.00	??	No activity yet
	4.5	335.00	??	No activity yet
	4.6	70,500.00	??	Reserved for last year
PMC		39,000.00	19,309.04	Soon to be used
		9,750.00	??	Reserved for final audit
		79,200.00	67,390.29	Soon to be completely used
		5,600.00	??	
		1,500.00	224.00	
		6,000.00	??	
		5,449.00	5,246.72	
		15,000.00	??	

Table 5: Status of total project's activities by State

States	# of planned activities	# of completed activities	Percentage of completed activities	# of ongoing activities
Chuuk	62	45	73	17
Kosrae	62	40	65	22
Pohnpei	62	45	73	17
Yap	62	52	84	12

By consolidating similar activities in outcomes 1 and 4, the total number of activities was reduced from 70 to 62 (refer to Table 5). Yap had the highest rate with 84% of its activities completed, while Kosrae had the lowest with 65%. By August 2023, on average 74% of the project's activities had been successfully completed.

Table 6: Earlier footprint of UNDP and other projects in energy efficiency sector

Sn	Name of earlier program/projects	Project tenure	Thematic area	Funding (US$)	Project's partners	Synergies
1	WB	2019-2024	Sustainable Energy Development and Access Project	30million	State utilities: PUC, KUA, CPUC, YSPSC FSM Department of R&D, State/National Energy working group, private sector, CSO	All four States
2	ADB	2020-2023	Renewable Energy Development Program	15million	State utilities: PUC, KUA, CPUC, YSPSC FSM Department of R&D, State/National Energy working group, private sector, CSO	All four States
3	EU-SPC	2021-2025	FSM Sustainable Energy	30million	State utilities: PUC, KUA, CPUC, YSPSC FSM Department of R&D, State/National Energy working group, private sector, CSO	All four States
4	JICA	2022	Procurement and installation of energy efficient/less C02 emission power generating set for Kosrea State	1.7million	FSM Department of R&D, KUA	Kosrea State

Between 2019 and 2022, several development partners started EE projects in FSM, as shown in Table 6.

Table 7: Planned vs actual dates of key human resource management

Staff position	Planned recruitment (MM/YY)	Actual recruitment (MM/YY)	Variation (in months)
Project Management	12/2020	03/2021	3
Project .Admin/Finance Officer	12/2020	03/2021	3
Energy Efficiency Specialist	12/2020	03/2022	15
Energy Efficiency Officier Kosrae	12/2020	05/2022	17
EEO-Pohnpei	12/2020	04/2022	16
EEO-Chuuk	12/2020	05/2022	17
EEO-Yap	12/2020	09/2021	9
EMRS Consultant	2023	07/2023	

Table 7 compares the dates of planned and actual human resource management dates. It reveals delays ranging from 3 to 17 months, all of which adversely affected the project's smooth implementation to varying degrees.

Table 8: Planned and actual budget allocation by outcomes and project management cost

Particular (major budget heading)	Planned budget (USD)	Actual expenditure (USD)	Percent	Reason for variation
Outcome 1	75,000.00	88,998.31	>100	1st year's CWP was only on outcome , 2 & PMC so we overspend on salary for PMU
Outcome 2	195,000.00	123,927.23	63.55	Some planned activities are not yet implemented
Outcome 3	1,200,000.00	946,313.75	78.85	Some planned activities are still pending
Outcome 4	144,985.00	67,070.73	46.26	Activities still pending
Project management cost	161,499.00	102,105.96	63.22	Some activities are still pending
Grand Total	1,776,484.00	1,328,386.00	74.78	Some activities are still pending

Table 8 displays the allocation of funds and the corresponding spending.

Table 9: Name of policies

Sn	Exact name of policies
1	EE/EC Policy
2	EE/EC Regulations
3	EE/EC guidance

The project supported the development of three policy documents, including EE/EC policies, EE/EC regulations and rules, and EE/EC guidance. These policy documents are currently undergoing the approval process in both FSM Congress and the four state legislatures so they can be transformed into legal statutes.

Table 10: Project key milestones vs. actual dates (2015-2023)

Sn	Important events	Planned date	Actual dates
	PIF approval	2018-2022	2021-2023
	PIF submission/approval	15 March 2017	16 August 2017
	CEO endorsement		29 August 2019
	LPAC meeting- project endorsement		
	ProDoc submission/resubmission	August 2018	14 December 2018
	UNDP-GoFSM Approval		14 December 2020
	ProDoc sign (project start date)		Dec.07, 2020
	Inception workshop		20 April 2021
	First disbursement		April 2021
	Mid-term review		November 2022
	Terminal evaluation		Sept. 2023
	Closing		Dec. 2023

Table 11: Budget breakdown by Atlas Code

Code	Description	Total (in USD)	%	Modification if any	%	Expenditure (in USD) as of June 2023
71200	International Consultants	247,500.00				157,349.63
71300	Local Consultants					
71400	Contractual Services – Individual	182,750.00				161,875.83
71600	Travel	102,700.00				45,004.60
72100	Contractual Services – Company	127,450.00				125,770.67
72200	Equipment and Furniture	839,000.00				297,705.89
72400	Communication & Audio Visual Equip	3,000.00				
72500	Supplies	3,000.00				344.57
72800	Information Technology Equip					
73100	Rental & Maintenance-Premises					
73300	Rental & Maint of IT Equip					
74100	Professional Services	121,000.00				
74200	Audio Visual & Print Prod Costs	21,500.00				17,700.00
74500	Miscellaneous Expenses	335.00				
74598	Direct Project Costs					
74700	Transport, Shipping and handle					
75700	Training, Workshop, Conference	113,349,00				11,176.64
	Grand total	1,776,484.00				816,927.83

The budget allocated according to the relevant codes and their corresponding expenditure statuses are found in Table 11.

Table 12: Status of ongoing contract and budget released (as of Aug 31, 2023)

Sn	Agency	Task	Amount	Contract date	Duration	Status
1	Ocean Climate Energy Advisors (Ocea)	Design and Installation of EMRS	90988	7/11/2023	6 months	Ongoing
2	RJ Electrical and refrigerators Services	Goods: Hybrid Solar AC, Inverter type AC, Solar water heaters	788304	05/24/2023		Ongoing
3	Steady Palms	Inverter type AC for Pohnpei and Chuuk States	326999	03/05/2023		Ongoing

Annex-6: Details of result framework

Using the project's results framework, the TE consultant conducted a thorough evaluation of the project's advancement with respect to the set indicators and targets. The project initially outlined 70 activities spread across 16 outputs, with four outputs allocated to each component or outcome. These were to be accomplished within a 36-month timeframe. However, due to initial delays in activity implementation and the substantial postponement in attaining most targets throughout 2021 and the first half of 2022, the project was forced to adopt corrective measures. Even so, the delays did have a discernible impact on the project's overall progress toward its ultimate goal and objectives.

Achievement of the project's goal

The primary aim of the project was to enhance energy efficiency in the country's building sector while concurrently reducing the total volume of GHG emissions. To gauge progress towards this objective, the project established two key performance indicators: (i) specific energy consumption in the building sector (measured in kWh/m^2/yr) and (ii) the cumulative reduction in GHG emissions from the building sector (measured in tons of CO_2e). The project adopted a continuous monitoring process to assess its achievement of the annual targets for each key indicator and used PIRs to report on that progress.

The low rate of initial progress can be attributed to several factors, as outlined by project stakeholders: (i) delays in the management of the human resources needed to establish a PMU), (ii) the imposition of public health restrictions in response to the emergence of the pandemic, (iii) limited familiarity among state government and other relevant agencies with the project's nature and the mandatory co-financing requirements outlined in the GEF protocol.

Progress during the third and fourth quarters of 2022 and the first and second quarters of 2023, in contrast, exhibited a positive trend, a direct outcome of the PMU's development and execution of a project acceleration plan. The project monitoring plan was revised, too, and put into action, with the PMU playing a central role in coordinating efforts with other relevant stakeholders. Furthermore, AWPs were adjusted to align with the modified monitoring plan and facilitate the tracking of implemented project activities and their outcomes in accordance with the set indicators. Particular emphasis was placed on monitoring the results of project activities, both baseline and incremental, as well as on the utilization of project funds (including the originally planned GEF funds and co-financing contributions from various agencies). Special attention was dedicated to addressing the challenge of securing committed co-financing in order to establish demonstrations. Throughout the project duration, the DoR&D maintained close collaboration with the UNDP Pacific Office in Pohnpei and actively engaged all IPs, especially demonstration hosts such as Solomon Power. This collaborative approach was integral to the successful implementation of the planned project activities.

The project encountered several challenges right from its inception. Progress was sluggish initially as a PMU had to be established and human resources recruited. The recruitment process proved to be both time-consuming and complex. The project document was approved in December 2020, but the project team was not hired and implementation did not commence until the beginning of the second quarter of 2021, meaning that at its outset the project was already five months behind schedule. Hiring short-term consultants saw further delays. For instance, bringing on board ESIA and Building Energy Efficient (BEE) specialists took several months, so they joined the team only in early December 2022. Once they had joined, however, the pace at which the remaining project activities were implemented accelerated markedly.

The COVID-19 pandemic exacerbated these challenges. Restrictions on the movement of staff and consultants impeded various activities as they were unable to conduct the required assessments and feasibility studies. The FSM's borders were closed from March 2020 until XX (a total of XX months), a fact making inter-state travel and travel to the outer islands difficult. In addition, the fact that flights to outer islands relied on the limited and unpredictable services provided by small airlines compounded travel difficulties. Furthermore, the pandemic delayed the conduction of preliminary energy audits as the requisite experts were lack. These delays in turn impacted the procurement and systematic installation of energy-efficient equipment and fixtures.

The project's innovative and adaptive strategy enabled it to successfully make up for early the gaps in project progress during the last two quarters of 2022 and the first three quarters of 2023. The marked increase in the rate of achievement was made possible by having all the necessary staff and short-term consultants in place, ready to fulfill their respective roles and responsibilities. The project's decision to hire international consultants (who worked remotely until travel restrictions were lifted) and national consultants collaborate on collecting preliminary data, engaging with stakeholders, and organizing workshops proved to be instrumental in overcoming various challenges. Project stakeholders praised this approach as it both expedited project tasks and developed the capacity of local and national consultants in energy-related matters. The increase in their capacity in turn enhanced the project's sustainability by ensuring that there will be ongoing support for meeting specific needs even after the project comes to an end.

All energy audits held thus far were successfully conducted and, after securing approval, all the required energy-efficient equipment and fixtures were purchased, and the work of installation initiated. Project records and feedback from project stakeholders indicate that, as of August 31, 2023, approximately XX% of the installation work had been finished and that the project had embraced a flexible approach to advance its activities. For instance, when an opportunity arose to share the ship charter costs of materials, the project swiftly mobilized a

team to conduct preliminary energy audits in Yap and Chuuk states. Co-financing arrangements with stakeholders were reaffirmed once cost estimates were finalized, enabling retrofitting to progress smoothly as called for in the preliminary energy audits (PEAs).

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Specific energy consumption in the buildings sector, kWh/m^2/yr.	150	145	144	140

Source, Project record, Aug 31, 2023

The current energy consumption per square meter per year in the buildings sector stands at 144 kWh/m2/yr, while the end-of-project goal is to achieve a target of 140 kWh/m2/yr. This reduction was made achievable through the widespread adoption of EE and environmentally friendly equipment such as cooling systems, solar water heaters, LED lighting, and similar technologies. Consequently, there has been a gradual decrease in energy consumption within the buildings sector over time.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Cumulative incremental GHG emission reduction from the building sector, tons CO_2e	0	2,160	3500	3,974

Source, Project record, Aug 31, 2023

The total cumulative reduction in GHG emissions from the building sector, measured in tons of CO2e, currently stands at 3500, while the end-of-project objective was 3974. This advancement has been made possible through collaborative investments from various development partners such as the World Bank (WB), Asian Development Bank (ADB), European Union (EU), and Japan International Cooperation Agency (JICA). These investments have been directed towards low-carbon power generation for all utility authorities and the promotion of renewable and sustainable energy sources. These combined efforts, in conjunction with the project's initiatives, have significantly contributed to the reduction of GHG emissions.

FSM's rate for 1 unit of electricity is approximately 0.456 US$. As called for in the project's plan, work was initiated in the state hospital and the state administrative building in Pohnpei. In Chuuk, the project focused on the state hospital and the state high school. In Yap, the administration building and radio stations were first to get attention.
The project deliberately selected government administration buildings, radio stations, hospitals, and schools for its first audits because it hoped to disseminate knowledge about energy-efficient technology widely and thereby boost its replication.

An Energy Monitoring and Reporting System (EMRS) is scheduled to be implemented by Sepember 2023. It will provide data on the specific energy consumption in each demonstration building. The project offered both technical and financial assistance to design and execute demonstrations of energy conservation and energy efficiency technologies aimed at reaping electricity savings in AC (40-60%), lighting (50-70%), and hot water (50-75%). According to the ProDoc, the estimated total annual energy savings will amount to 2,324.5 megawatt-hours (MWh).

The project's target is to reduce the specific energy consumption in the 25 demonstration buildings from 150 kWh/m^2/yr to 140 kWh/m^2/yr by the end of the project. It projects that it will indeed realize this reduction by the conclusion of the project. The project's direct GHG emission reductions are primarily attributed to the demonstrations and to the replication of projects.

The project faces several challenges. First, it lacks a well-defined strategy for monitoring progress toward its targets related to energy consumption and GHG emissions. The project was, however, able to obtain billing information in collaboration with state utility offices after it installed AC units. The project is making strides: it is in removing barriers and making progress toward the national goal of achieving a 50% improvement in energy efficiency in a gradual and consistent manner.

According to the contractor's timeline, the remaining installation work was scheduled to commence in September 2023. Other interventions, such as those facilitated by government initiatives and contributions from various donors also played a significant role in reducing energy consumption. The planned installation of an EMRS in September 2023 will enhance data collection on specific energy consumption in the demonstration buildings.

The project's development partners allocated substantial resources to promote EE, solar energy, and battery EE systems as well as to install power generation sets that emit less CO_2 than is currently emitted. For example, the World Bank's investment portfolio in FMS totals US$ 20.5 million and supports the Sustainable Energy Development and Access Project (SEDAP) across all four states. SEDAP contributes to the adoption of efficient independent power generation sets that are more environmentally friendly and produce fewer CO_2 emissions than is ordinarily the case. The Asian Development Bank has an investment portfolio of US$ 15 million and actively supports the GoFSM in the energy sector through the implementation of the Renewable Energy Development Program (REDP) in all four states. This program was instrumental in the implementation of solar battery energy systems, systems which significantly reduced CO_2 emissions. The European Union, through the Secretariat of Pacific Communities (SPC), has an investment portfolio of Euro 30 million in FSM. Its assistance focuses on sustainable energy initiatives designed to facilitate the transition from fossil-based to renewable solar energy production. Japan International Cooperation Agency funded and installed an eco-friendly power generation set valued at over US$ 1.5 million US$ in Kosrae State. These concurrent initiatives in the FSM's energy sector made a substantial contribution toward reducing specific energy consumption in the building sector.

Achievement of the project's objectives

The overarching aim of the project was to enhance the utilization of energy-conserving and energy-efficient methodologies and practices in the planning, retrofitting, operation, and maintenance of public-sector buildings in the FSM by addressing five specific barriers: (i) policy, regulatory, and institutional (see Box 2), (ii) information, specifically reporting on the results of energy monitoring, (iii) technical, (iv) capacity, (v) and financial.

To gauge the project's progress toward its objective, two key indicators were established: (i) the cumulative incremental fossil fuel savings resulting from the implementation of sustainable energy efficiency and low-carbon interventions, measured in tons of diesel equivalent (toe diesel), and (ii) the number of new employment opportunities created through the application of EC and EE technologies and techniques in the country's building sector.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Cumulative incremental fossil fuel savings due to sustainable energy efficiency and low-carbon interventions implemented, toe diesel	0	566.4	950	1,042.1

Source, Project record, Aug 31, 2023

The cumulative incremental savings in fossil fuels resulting from the implementation of sustainable EE and low-carbon initiatives, measured in tons of oil equivalent (toe) diesel, currently stands at 950. The project's end-of-term target is set at 1042.1 toe diesel. Thanks to the support and investment from other development partners such as the World Bank (WB), Asian Development Bank (ADB), European Union (EU), and Japan International Cooperation Agency (JICA) in low-carbon power generation for utility authorities, the project's goals have already been met well before the expected timeline.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
No. of new jobs created in the application of EC & EE technologies and techniques in the country's building sector	0	4	12	4

Source, Project record, Aug 31, 2023

The application of EC&EE technologies and techniques in the country's building sector has resulted in the creation of 12 new jobs, surpassing the initial target of 4 jobs. This achievement is attributed to the awarding of all procurement and installation contracts for the equipment to five local contractors. Each of these contractors has contributed to job creation by hiring two personnel each to carry out the required work. Additionally, there has been job creation on the supply side of EC&EE equipment as well.

The project's original timeline aims to complete the remaining installations by the end of October 2023, which is 45 days prior to the project's closure. In pursuit of this goal, the project has successfully procured the necessary equipment and entered into contracts with contractors that install EE solar-hybrid AC systems. Notably, in Yap State, all installation except that of solar water heaters in Yap State Hospital is complete. In addition, the EMRS

is to be installed by September 2023. This system will play a crucial role in collecting specific data on energy consumption by the demonstration buildings and enhance the project's monitoring and evaluation efforts.

The project successfully trained four individuals in EE technologies and recruited and contracted five technicians, four men and one woman, to install equipment at the demonstration buildings, particular the state administrative building and state radio station of Yap. As the project progresses and fully implements its activities under Outcome 2, which pertains to the enhanced management and monitoring of the energy performance of public sector buildings, additional employment opportunities will be generated. These opportunities will benefit both men and women in the country's building sector, particularly in the realm of EC&EE applications. In addition, the project contracted local contractors from the four states, agreeing to spend a total of 1 million US$ for the comprehensive procurement and installation of EC&EE equipment..

The procurement and installation of both hardware and software equipment for the entire project were entrusted to local contractors, a decision generating employment opportunities within the FSM. This initiative directly employed five contractors based in Pohnpei. These contractors recruited an additional four local technicians to carry out project activities in each of the four states. As the adoption of energy-efficient equipment continues to expand on the demand side within FSM, more employment opportunities are expected to emerge on the supply side in the near future. The potential for local job creation is broadening thanks to the initiatives of the project's development partners. By the conclusion of the project's tenure, it is anticipated that over 20 local technicians will secure ongoing employment in the energy-efficient sector within the FSM.

Procurement of energy efficient equipment and fixtures

In Yap State, approximately 98% of the planned work is complete, and the remaining 2% comprises installing solar heaters at the Yap state hospital. In Pohnpei State, around 80% of the work is complete, and the remaining 20% is scheduled for completion by September 15, 2023. Vendors have been chosen, contracts have been awarded, and equipment and fixtures are in place; only the actual installation work remains. In Chuuk State, about 75% of the work is complete, and installation has commenced. The same local contractor who is working in Pohnpei State predicts that the remaining work will be finished by September 2023. In Kosrae State, progress stands at a 60% completion rate. The vendor was awarded a contract in June 2023. The first payment was made in accordance with the contractual terms, and the second payment is currently being processed. The required equipment and fixtures have been shipped from the Philippines. The installation work is expected to be finished by mid-October 2023. The delays incurred are attributable to the limited numbers of vendors and trained technicians available in Pohnpei.

AC installation work

In Kosrae State, just 40% of the AC installation work is complete, but the remaining work is scheduled to be completed by October.

Achievement of project's anticipated outcomes

Outcome 1: Enforcement of policies and guidance on the energy efficient and energy conserving design, retrofit, operation and maintenance of public sector buildings

Since there were no specific policies or clear guidelines and since existing energy-related policies and guidelines were only enforced, this project focused on addressing the obstacles to promoting and supporting the adoption of cost-effective EC&EE technologies in public-sector buildings in the FSM. The project aimed to assist in the development, approval, and enforcement of new policies and regulatory instruments that would govern the use of and strongly emphasize the careful monitoring of EC&EE technologies. The ProDoc outlines four key outcomes to achieve this goal and adopts a three-year timeline for the development, documentation, testing, and dissemination of these new policies. However, since policy support work tends to be time-intensive and implementation in the initial year was slow, the project's advocacy for policy works made only limited advancements. Given that little times remains for implementation, it may be challenging to fully engage stakeholders, particularly authorities, and ensure new EC&EE policies and guidelines will be completed before the project's end. To streamline and organize these policy initiatives, specific roles and responsibilities were allocated among the key consultants involved in the project. For instance, the was tasked with contributing to activities related to outputs 1.1.6, 1.1.7, 1.2.1a, and 1.2.1c, while the technical advisor, an expert in energy efficiency policy and regulation, was assigned outputs 1.2.2 through 1.2.4 and 1.3.1 and 1.3.2 to facilitate policy-related work.

Before formulating new policies, the project wisely followed a series of steps to engage stakeholders, including conducting a survey to assess the effectiveness of existing building-sector policies and regulations. These steps

included (i) analyzing the results of a survey on the effectiveness of current building-sector policies and regulations, (ii) conducting a comparative evaluation of domestic and international EC&EE-related policies and regulations for the building sector, (iii) assessing the impact of policies and regulation on the practical application of EC in the public sector, (iv) evaluating policies concerning designed to increase the participation of qualified women in promoting and implementing EC&EE technology designs and applications in public-sector buildings, (v) reviewing institutional and financial policies related to the savings and revenue generated by public-sector buildings, and (vi) providing recommendations for incorporating international EC&EE policies and regulations into the FSM context.

The project actively engages with state governments to discuss how they can adopt, modify, or amend the draft policies and regulations. These policies will become law within their respective states after they are approved by national legislature as the FSM operates under a federal system of government. The goal is to have all states approve the draft policies and regulations and associated guidance before the project's end in December 2030. To expedite the policy development process, the project has devised an action plan that includes: (a) designing and developing an energy management system, (b) providing training for focal points and public-sector staff involved in the operation and maintenance of EC&EE initiatives and equipment by January 2023, and (c) developing EC&EE policies and regulations by December 2022. Despite these action plans and ongoing support for them, progress remains slow. Stakeholders have cited several reasons for the sluggish advancement of policy initiatives, including the following: (i) challenges in recruiting qualified policy specialists with expertise in energy and law, (ii) the late addition of the EE policy expert to the project team, which delayed the elaboration of the scope of work, generation of deliverables, and refinement of methodologies, including engagement strategies, and (iii) disruptions caused by the lockdowns and travel restrictions associated with the COVID-19 pandemic, which hindered the policy development process as the numerous meetings, consultations, reviews, and reflections involving relevant public and private sector stakeholders that needed to happen did not or were forced online, a less effective forum than face-to-face meetings

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Number of approved and followed building EC&EE policies and associated guidance and implementing rules and regulations.	0	3	0	3

Source, Project record, Aug 31, 2023

As of August 31, the project has formulated three policies, regulations, and guidelines related to EC&EE and is currently progressing towards obtaining final approval from Congress.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Number of public-sector buildings that are compliant with energy standards stipulated in building EC&EE policies and associated guidance and implementing rules and regulations.	0	4	7	14

Source, Project record, Aug 31, 2023

Currently, there are seven public-sector buildings that adhere to the energy standards specified in the building EC&EE policies, along with the corresponding guidance and implementing rules and regulations. However, the project's ultimate target by the end of its term is to have 14 such compliant buildings. For instance, all the structures within the College of Micronesia are in accordance with the standards outlined in the draft EC&EE policies and the accompanying guidance and regulations.

The project assisted the GoFSM in the development and modification of policies related to EC&EE. Currently, three documents, namely, (i) the EC&EE policy, (ii) EC&EE regulations and rules, and (iii) EC&EE guidelines have reached the draft stage and are currently being considered for approval by FSM's national congress and the legislative bodies of the four states. Following the lengthy approval process, the policy regulations and rules, and guidelines will become legally binding. The DoR&D, acting as a technical agency, is facilitating the advance of these policy initiatives. At the state level, approval of these policies is expected to encounter minimal challenges. Once they are endorsed at the national level, the documents are likely to be adopted by the four states through a relatively straightforward approval process. The fact that adoption will be so smooth is attributed to the fact that state governments were actively involved in their initial formulation. The contributions of Chiara Franco,

the Environmental and Social Impact Assessment Specialist, and Franco D'Amore, the EC&EE Policy, Regulation, and Guidance Expert, played a significant role in advancing these initiatives.

Outcome 2: Enhanced management and monitoring of the energy performance of public-sector buildings

To accomplish this outcome, the project initiated energy audits, identified appropriate EE solutions, and implemented regular reporting and feedback mechanisms for energy usage. The project planned four outputs to attain this outcome, which focused primarily on overcoming information barriers by researching and gathering data and information related to EC&EE. The project also played a part in formulating and enforcing an action plan.

The project aimed to identify the most commercially viable EE equipment, conduct EE demonstrations, and replicating renovations. To facilitate these goals, the project initiated a competitive bidding process to procure an EMRS and eventually awarded the contract to a consultant based in Pohnpei. This step allowed for the execution of preliminary energy audits and feasibility studies. Later the project identified requirements to support the design and development of the public-sector EMRS. Under the direction of the EMRS consultant, the installation of the EMRS software has been in progress since July 2023. The consultant is currently revising the software system so it can store a large amount data in the cloud and is expected to complete the task by the end of September 2023.

The recruitment of a BEE specialist was delayed as several tasks needed to be customized to ensure the project's smooth progress. To achieve this target, the project has plan to conduct training sessions and workshops after carrying out feasibility studies and in-depth energy audits to determine the requirements for capacity-building. Stakeholders have indicated that by November 2023, quarterly reports on the energy usage of public-sector buildings will be created using data collected from the EMRS. The consultant has already begun to analyze the data obtained from energy audits with the goal of designing an appropriate EMRS for public-sector buildings and developing the framework and mechanisms necessary for its implementation.

The project was tasked with creating and submitting annual reports at both the building and sectoral levels, following an ISO50001 style framework, to the FSM Energy Group, with an initial target of producing 14 such reports. The development and design of these annual reports were scheduled to take place after feasibility studies and comprehensive energy audits were conducted. These reports and studies played a critical role in identifying what needed to be done to align the EMRS in public-sector buildings with ISO50001 standards.

It is noteworthy that the project has already commenced carrying out preliminary reviews, analyses, and data compilation for each of the project's outputs. This process can be expanded once retrofitting is complete and the EMRS is fully implemented as the latter will enable the project to collect empirical data for reporting purposes. The first annual report is expected to be submitted to the FSM Energy Group by December 2023, coinciding with the project's conclusion.

Overall, the delays in achieving the objectives of Outcome 2 were attributed to various factors, including the delayed recruitment of a BEE specialist, state energy efficiency officers, slow communication between different government levels (national and state), and challenges to travel. These delays meant that many internal studies and assessments were not completed. For example, the project could not implement a BEAS evaluation because there was no EMRS and no sustainable follow-up plan was developed for BEAS due to the lack of training in monitoring and reporting. The evaluation of EMRS results and impacts faced obstacles due to the absence of energy consumption data for buildings, which in turn hindered the monitoring, reporting, and assessment of energy use. Since the project was uncertain about how to retrieve data from the EMRS and compile it into a report, the development of a sustainable follow-up plan for EMRS was also delayed. .

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Review buildings under the established and operational energy audit system to discover the most comprehensive and best commercially available EE equipment, conduct EE demonstration and replicate renovations.	0	12	14	30

Source, Project record, Aug 31, 2023

A total of 14 buildings have undergone evaluation within the established and operational energy audit system to identify the most comprehensive and commercially superior EE equipment. It's worth noting that the project's original target was to review 30 buildings by its conclusion.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
According to the EMRS, number of state/national level quarterly reports on the energy use of public-sector buildings from state power utilities and consumption reports	0	4	0	4

Source, Project record, Aug 31, 2023

At present, there is no Energy Management and Reporting System (EMRS) report accessible. However, the project anticipates having one by November 2023, as the EMRS equipment is currently installed in the buildings.

Two PEAs have already been finished, and the remaining five are scheduled to be completed by September 15, 2023. The delays were caused by a sudden change in the plans of the Pohnpei state government, which required that a dilapidated administrative building be renovated before the installation of solar panels and air conditioning could be deemed practical.

Energy monitoring and reporting systems in 30 buildings

The project awarded a contract for developing an energy monitoring and reporting system (EMRS) to the Oceanic Company of Pohnpei. Oceanic is currently enhancing its software to handle a larger volume of data by modifying its systems and expanding its data storage capacity. The EMRS should fully installed by the end of September 2023. Once the EMRS is prepared, it will require just one day per State to install, operate, and provide guidance to the respective government technicians and energy efficiency officers. Once the EMRS is operational, data collection must commence promptly.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Number of building/sectoral level ISO50001 style annual reports submitted to the FSM Energy Group	0	8	0	14

Source, Project record, Aug 31, 2023

As of August 31, there is no available EMRS report. However, the project anticipates having these reports by November 2023, as the EMRS equipment is presently installed in the buildings. Once the EMRS is operational, it will provide data at both the building and sectoral levels in an ISO50001 style, facilitating the preparation and submission of annual reports to the FSM Energy Group.

Delays in installing the EMRS have affected the following internal studies and assessments: (i) Assessment of the Building Energy Audit System (BEAS) was postponed because this evaluation is contingent on the EMRS system's being operational, (ii) The development of a sustainable follow-up plan for the BEAS has also been impacted as training on how to monitor and report based on the EMRS has not yet been organized yet since the EMRS itself has not been fully installed, (iii) Evaluation of the results and impacts of the EMRS cannot take place until data on energy consumption in the building sector has been collected. Only after collection has begun can the monitoring of, reporting on, and evaluation of energy usage occur, and (iv) the development of a sustainable follow-up plan for the EMRS is pending until the system is operational and it is possible to retrieve data from the EMRS and generate energy usage reports.

Under component 2, an EC&EE assessment survey was successfully conducted, and the consultant developed training materials for government officials. Given the current level of preparation and the completion of various preliminary tasks, the installation of the EMRS is expected to be complete by September 2023. Training in using the EMRS is to be complete by October 2023. To illustrate, the World Bank actively installs energy-efficient power generation sets that emit less CO_2 and are more environmentally friendly than is ordinarily the case. As of September 2023, the project had already achieved a reduced CO_2 emissions for the building sector by 4,000 CO_2e. By the end of October, once all the planned solar ACs have been installed, this figure is projected to reach 4,200 CO_2e.

Outcome 3: Increased understanding of the viability and benefits of applying EC&EE technologies to public-sector buildings and facilities

This aspect of the project focused on overcoming technical obstacles. It was the central component, constituting as it did nearly 75% of the direct costs (excluding project management expenses) associated with this outcome The project's primary objective was to provide technical support to enhance the adoption of EC&EE technologies in public-sector buildings. The ProDoc outlines four planned outputs aimed at achieving this outcome.

As previously mentioned, the installation of the EMRS is set to be finalized by September 2023, and all the preparatory work and associated activities are progressing smoothly. Once the system is fully installed and operational, it is anticipated that it will collect specific data on energy consumption within the demonstration buildings. The project's objective is to implement the EMRS in 30 buildings. During the third PAB meeting in May 2022, it was reported that activities within this component had been delayed due to the late hiring of relevant consultants. In addition, since the travel and resource challenges posed by the pandemic had a detrimental impact on the project's pace, it was not feasible for the project to conduct rotational PAB meetings in each state.

Reasons for not organizing a rotational PAB in each state

- As reported during the third PAB meeting in May 2022, activities were delayed due to challenges in hiring the necessary human resources. The pandemic also caused significant delays.
- It was not possible to conduct a PAB in each state in rotation due to pandemic-related restrictions and the substantial travel costs associated with such an arrangement.
- In addition, since each PAB member had pressing commitments and a heavy workload, mainly because government offices had limited staff, their traveling to other states for meetings was difficult. Delegating someone to attend in their stead proved unfeasible, too.

Government personnel were limited in number, and managing the substantial workload made it difficult for them to take time away for several days. There were not always people to whom they could delegate their responsibilities. To address this hurdle, the project organized online PAB meetings where detailed discussions were held on each agenda item before any decisions were made. Moreover, data from a fully implemented application of EC&EE technology in Yap State showed highly positive results, results which can serve as a compelling reason for adopting EC&EE technologies in other public-sector buildings.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Number of public-sector building EE technology application projects designed and financed for implementation as demonstrations.	0	8	14	14

Source, Project record, Aug 31, 2023

The number of EE technology application projects designed and funded for implementation as demonstrations in public-sector buildings currently stands at 14, which matches the end-of-project target of 14 as well. Furthermore, there is an expectation of additional sub-projects in the pipeline, thanks to the Chuuk state government's investment in EC&EE equipment at the state hospital before the project's installation at the same facility.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Number of EC&EE projects implemented in public-sector buildings influenced by the results and outcomes of the implemented demonstration of applying technology	0	4	7	16

Source, Project record, Aug 31, 2023

The number of EC&EE projects that have been carried out in public-sector buildings, influenced by the results and outcomes of the technology application demonstrations, currently stands at 7. This falls short of the initial target of 16 projects. Notably, during the project's implementation, 7 buildings within the College of Micronesia integrated EC&EE technology. Additionally, other buildings, including the Micronesia Conservation Trust, Pohnpei Public Library, Pohnpei Agricultural Services, Pohnpei Women's Council Resource Center, Gonzaga Catholic Mission Hall, and the High School Building for the Central Union for Young Adults, underwent retrofitting with EE and environmentally friendly technologies.

In Chuuk State, the project acquired 45 inverter-AC units for installation in the Chuuk state hospital. Following the recommendations of the project's 2022 PEA, the state government independently procured and installed some of the ACs and inverters. Any surplus AC units will be installed in other public buildings after the Chuuk state government conducts energy audits and makes recommendations. The total number of projects designed and funded to demonstrate the implementation of EE technology in public-sector buildings has now reached 20. All public buildings in the national capital, Palikir, have upgraded their lighting systems using EE/ EC measures.

Latest progress

- The administration buildings are currently being retrofitted with EE equipment. It is anticipated that the work will be finished in all states but Kosrae by September 2023. In Kosrae, completion is expected by October 2023.
- In Pohnpei State, the installation of solar panels and AC units in public buildings is advancing smoothly. The project plans to provide support for AC units in the office buildings of both the Department of Land Survey and the Fishery and Aquaculture Office. The work at the Department of Education and the Department of Public Safety is to be complete by September 15, 2023. The same technicians are working in different locations, thereby increasing efficiency and conserving resources.
- Contracts have been granted for the hospitals in various states, and the remaining activities, including the installation of EC&EE ACs are expected to be complete by October 2023. The pending tasks include installing eight solar water heaters at Pohnpei State Hospital, six heaters at Chuuk State Hospital, and four heaters at Yap State Hospital. In Chuuk State, the hospital itself purchased AC units based on the results of the project's PEA as the project's procurement of ACs had been significantly delayed. As requested by the state government the ACs allocated for Chuuk State Hospital will be utilized in other administrative public buildings. The project also has plans to retrofit buildings, meaning replacing less EE equipment with more EE alternatives.
- Installation contracts for schools, which are planned for Chuuk and Kosrae states only, were awarded in June 2023 and are scheduled to be completed by October.
- The work at radio stations, planned for only Yap and Pohnpei states, is complete.

Outcome 4: Enhanced awareness and knowledge on the cost-effective application of EC&EE technologies to public-sector buildings

This particular outcome was dedicated to addressing the challenges associated with limited technical capacity and awareness. To attain this objective, the ProDoc outlines four planned outcomes. Since there was no EMRS, it was not possible to enhance the capacity of individuals working within public-sector buildings to effectively oversee the planning, implementation, and evaluation of EC&EE projects. The project has a plan in place to develop training materials based on the EMRS. To accelerate this process, an action plan was formulated; it which involves three key measures: (i) designing and developing and EMRS by September 2022, (ii) creating a training program, and (iii) selecting focal points or public sector staff for training by October 2023.

Initially, there was a plan to collaborate with the SPC on a capacity-building initiative, but this partnership was later discontinued due to the limited time remaining in the project's timeline and establishing an agreement would require too much time. However, as part of preparation for installing an EMRS preparation, the PMU lead site visits to assess practical aspects and ensure corrective measures are taken. In light of these changes, the decision was made to integrate the training components of outcomes 2 and 4 and then conduct it. The project plans to complete the training by October as long as an EMRS and training package are finalized by September. The training will involve more than 10 men and women from public buildings, state energy officers, and staff from the national Energy Division. It will focus on how to design, implement, and evaluate EC&EE applications within public buildings.

The project's objective is to establish energy management programs in 30 public buildings. Some delays occurred due to challenges in hiring suitable consultants. Given the interconnected nature of these activities, the execution of the second set of activities depends on the completion of the first. Contractual agreements with consultants and contractors, the enthusiasm of government stakeholders, stock of equipment in place or dispatched form suppliers make it highly likely that most major tasks will be accomplished by the end of October. This will leave the months of November and December for consolidating and institutionalizing project activities enough to generate more significant impacts.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Number of trained public-sector building personnel that can ably manage to design, implement and evaluate buildings that apply EC&EE technologies.	0	6	4	10

Source, Project record, Aug 31, 2023

The current number of trained public-sector building personnel capable of proficiently designing, implementing, and evaluating buildings that incorporate EC&EE technologies is 4, falling short of the project's end-of-term target of 10. However, it's noteworthy that as of now, four individuals within the public sector have acquired the skills to manage the design and implementation of EC&EE technologies. There are also expectations for additional personnel to receive training by October 2023.

Description of indicator	Baseline level	Mid-term target level	As of Aug 31, 2023	End-of-project target level
Number of public-sector buildings with established energy management programs and implemented EC&EE projects.	0	8	8	32

Source, Project record, Aug 31, 2023

The current count of public-sector buildings that have initiated energy management programs and executed EC&EE projects stands at 8, which falls short of the project's original target of 32. As of the current status, 8 public buildings have successfully established EMRS (Energy Management and Reporting Systems), and it is anticipated that additional buildings will complete this process by the third week of September.

A contract for this component was granted in July 2023 and work recently commenced. An EC&EE assessment survey was successfully concluded, and the consultant developed training materials for public personnel. The installation of the EMRS is currently underway and is projected to be complete by September. Training on EMRS data management is scheduled to be complete by October.

Annex-7: Planned stakeholders

Stakeholders expressed concerns regarding the limited involvement and impact of the private sector, whose planned roles were to (i) assist in identifying and analyzing barriers, (ii) provide equipment and warranties, and (iii) maintain equipment as called for in service contracts. This limitation was attributed to the restricted participation of the private sector in the equipment bidding and procurement processes. According to the ProDoc, the managers and administrators of the designated pilot public-sector buildings were expected to identify the need for and carry out energy audits through a series of capacity development activities. They were also meant to actively participate in the design and implementation of technical assistance while leveraging co-funding. Although they did provide equipment and fixtures, there were several delays in this regard. The role of CSOs was pivotal during project implementation. However, apart from school competitions, there was little evidence of their comprehensive engagement in project initiatives despite the fact that the project originally planned to involve CSOs in activities under Outcome 4.

c. Visible changes as a result of stakeholders' engagement

As planned, the project successfully forged partnerships with key stakeholders, both governmental and non-governmental organizations, through various contractual agreements. The project received the expected technical support and even integrated a few additional partners to address requirements unforeseen in the initial ProDoc. Through meticulous planning and allocation of resources, the project effectively engaged stakeholders at appropriate junctures and mobilized their contributions at appropriate times. The project's dedication and effort and the timely involvement of stakeholders led to the attainment of the anticipated results. Notably, the absence of complaints by stakeholders about their own and others' roles during interviews suggests that a spirit of unity and collaboration prevailed.

Stakeholders acknowledged that the majority of partnership arrangements were appropriate and that roles and responsibilities were well-defined. In later stages of the project, stakeholder engagement expanded, aided by the active roles of the project's EE officers in all four states. Communication among project stakeholders also improved significantly, again with the EE officer playing a crucial role in facilitating this enhancement.

d. Challenges that undermine the effective engagement of stakeholders

The project encountered difficulties in expanding its partnership approach and fully optimizing stakeholder engagement, primarily as a result of the repercussions of the pandemic and the staff turnover within UNDP Multi Country Office (MCO). In fact, a total of two UNDP Country Programme Officer/Project Analysts were working for this project. These delays had adverse repercussions on various interconnected activities, including the formulation of integrated management plans. The onset of the pandemic had a substantial detrimental impact on the establishment of authentic partnerships and the subsequent execution of the processes of supply and equipment management. Shipping times for essential items were, however, extended to accommodate various restrictions, such as border closures and mandatory quarantine procedures.

Annex-8: Adaptive project management

c. Practiced regular oversight, monitoring and follow-up

In terms of project oversight and ownership, the PAB assumed the role of offering strategic guidance and overseeing operations. Project stakeholders praised the composition of the PAB; they appreciated that it was thoughtfully constructed to encompass pertinent agencies at the national and state levels and that all four project states were included. The PAB was supposed to hold two meetings annually, but in total it has held just three (in December 2021, January 2022, and May 2022), fewer than intended. At these meeting, PAB members reviewed project progress and approved AWPs. The January 2022 meeting also revisited the annual work plan (AWP) for 2022 in order to expedite project processes. Owing to some states' delay in appointing members, the first PAB meeting was not held until an entire year after the project's initiation. This lengthy delay impeded the project's ability to make strategic decisions and start implementation during the initial project months.

The PAB meetings facilitated discourse on key implementation bottlenecks and led to consensus on measures to mitigate them. For instance, during the most recent PAB meeting in May 2022, after concerns were raised about sluggish progress and delays, several measures to accelerate implementation and enhance delivery rates were proposed. In addition, a suggestion by the PMU to commence procurement procedures for 50% of the equipment before finalizing energy audits was deemed unsuitable due to logistical challenges. Instead, the PAB requested UNDP's assistance in procuring 50% of the equipment, even though, according to the NIM, all procurement should have been undertaken by the IP/PMU itself, without UNDP involvement. This decision itself was noteworthy in its adaptive effort to bridge gaps resulting from delays in staff recruitment. Reflecting on the procurement plan, stakeholders opined:

> *"While a procurement plan was established early on in the project, it had to undergo multiple revisions due to various internal and external challenges. The crucial support provided by UNDP MCO Fiji played a pivotal role in expediting procurement activities. This support involved enhancing the capacities of PMU staff and local contractors. In addition, owing to the delayed establishment of the government after the 2018 elections, the project decided to have UNDP manage procurement during the first year to prevent potential implementation delays. Leveraging the UNDP procurement system, the project initiated tenders for consulting services to cover several years of implementation, thereby saving valuable time and effort."*

Over time, with insights gathered from the field, the PAB incorporated new members to expedite the pace of implementation. In May 2022, a recommendation was made to invite a relevant official from the Ministry of Finance to PAB meetings in an effort to alleviate the finance and payment difficulties faced by the project. However, thoughts about involving state planning commissions and state utilities in PAB meetings have not materialized, despite the fact that these organizations play crucial roles during implementation in promoting the sustainability of the project's best practices. As called for under the NIM, UNDP served a quality assurance role by supporting the PAB and PMU through objective and independent project oversight and monitoring, both achieved in part through regular meetings with the PMU.

Despite this effort, in January 2022, the PMU was urged to enhance the M&E of project results by reviewing the results framework to track project targets against baselines. UNDP also extended substantive and tangible support to implement specific activities, including procurement and planning. For instance, towards the end of 2022, a mixed remote and physical mission was organized to guide the PMU in formulating its AWP for 2023 as well as gender action, procurement, and monitoring plans. These instances demonstrate the project's commitment to practicing adaptive management tailored to local needs and contextual nuances throughout the implementation process.

Annex-9: Risk management

The risk associated with the non-realization of committed co-financing, especially for demonstrations, was effectively resolved through regular meetings and review sessions involving the PMU and IPs, specifically the DoR&D. This collaborative effort generated co-financing for the demonstration hosts. Given that many of the demonstrations represent improvements on the demonstration hosts' own budgeted energy efficiency projects, a certain degree of assurance regarding cost sharing for the demonstrations was in place. While challenges concerning the timing of the implementation of the baseline demonstrations and incremental features did arise, they were successfully resolved through consistent coordination between the PMU and the demonstration hosts. Delays were also attributed to public health regulations and restrictions, primarily those stemming from the COVID-19 pandemic, which had not been identified as a social and environmental risk during project design. The pandemic's impact led to delays in the project's timeline due to government shutdowns and emergency border closures. In response, the project adopted an acceleration plan and expedited the implementation of activities that were postponed due to border closures. A draft version of the Environmental and Social Management Framework was developed by the Environmental and Social Impact Assessment (ESIA) Specialist.

During the design phase, the project adhered strictly to UNDP's social and environmental safeguard requirements and implemented the UNDP Social and Environmental Screening Procedure sincerely. After a comprehensive assessment, the project was categorized as "low risk," indicating that it was not anticipated to yield significant adverse environmental or social impacts that couldn't be effectively managed through simple risk management measures. This low-risk categorization implies that the impacts and risks associated with the project were of limited scale and could be reasonably well identified and managed. Standard best practices were typically sufficient for addressing these risks, although the project predicted that further review of a minimal or targeted nature would be required periodically to address the dynamic nature of the risks, which could change unpredictably under various circumstances. As of August 2023, however, project stakeholders state that no significant negative social or environmental impacts had been foreseen. In fact, the project had actually enhanced environmental integrity and social wellbeing. Through the careful implementation of project activities, it advanced gender equality and participatory decision-making and reduced environmental degradation.

During implementation, the project identified additional risks relevant to the SESP and then, with advice from an international consultant, those risks were managed. There was also a financial risk associated with project delivery as the expenditure trajectory lagged significantly behind the planned expenditures outlined in the ProDoc. This delay was primarily attributed to the impact of COVID-19 but was exacerbated by the slow recruitment of human resources and delays in procurement. Responses to the financial risk were identified, such as the clustering of procurement activities, but these responses did not comprehensively mitigate the financial risks.

To address the programmatic gaps resulting from travel restrictions, the PMU and PAB found alternative solutions to securing the technical resources needed for the project demonstrations. The risk that relevant GoFSM agencies would fail to approve or enforce formulated policies and regulations will manage through a series of review-and-reflection sessions and advocacy efforts. These actions will help garner adequate support from the parliament for the adoption of the formulated policies and regulations. This risk will manage through a careful assessment of various aspects of the policy and regulatory measures. Then proper communication and negotiation will use to adjust them to meet the requirements and limitations of public building managers and administrators. Furthermore, the PMU used the diligent documentation of the results of the project's activities to mitigate residual issues stemming from the aforementioned risks.

Annex-10: Relevance

a. The project's objectives are aligned with the priorities of the government of FSM and of local communities.

The project aligns with FSM's national strategies and plans due to the strong correlation between its outcomes and outputs. This alignment is particularly evident in the context of national priorities. FSM's commitment, as outlined in its NDC report, involves achieving an unconditional 28% reduction in GHG emissions from 2000 levels by 2025. This reduction is to be achieved by implementing energy EC&EE measures that will in turn decrease annual power generation. The project was thoughtfully designed to incorporate elements that effectively lower GHG emissions, thus contributing to FSM's 2025 national commitments. In addition, the project played a significant role in enhancing understanding and recognition of the importance and advantages of EC&EE measures, and, through its activities, outputs, and outcomes, succeeded in deepening awareness of EC&EE measures. Notably, the building energy audits conducted as part of the project together fostered a better grasp of the value and benefits of EC&EE measures, particularly among public building authorities. These efforts, secured by efficiently

managing financial, human, and technical resources, played a pivotal role in influencing national plans and programs. Regarding the timeliness of energy audits, stakeholders expressed:

> *"Given that the majority of energy audits were conducted before the onset of the COVID-19 pandemic, retrofitting construction work had to proceed during the pandemic, a fact which led to delays and difficulties in procuring necessary equipment and construction materials."*

One of the key achievements of the project was its contribution to enhancing the capacities to secure funding for EC&EE measures among public building managers and administrators, who, prior to the project's initiation, had inadequate awareness and skills in this area. By focusing on capacity-building, the project empowered officials to secure funding for EC&EE measures through the meticulous implementation of project activities. This initiative also provided a structured approach to planning and implementing EC&EE measures: it started no- or low-cost measures before subsequently investing the savings from these measures in medium-cost measures, and then further utilizing the savings generated from the medium-cost measures for capital-intensive measures. This stepwise approach offers a comprehensive and effective method for progressing from simple to complex EC&EE measures.

b. The project's objective fits the development priorities of FSM and its overall environment.

Recognizing that one of FSM's development approaches is to encourage public-private partnerships (PPP) aimed at enhancing the renewable energy sector, the project assumed a structure carefully calculated to contribute to the establishment of institutional frameworks and arrangements for EC&EE within both public and private buildings. This objective was achieved through a series of interventions designed to increase the likelihood of success. The first was (i) a targeted assessment of capacity requirements in the banking and finance sector, followed up by (ii) the development and execution of a specialized capacity-building program and associated training manuals tailored specifically to the needs of the banking and finance sector as identified in the first intervention. Next, the project (iii) conducted studies focused on reducing the risks associated with investing in projects involving the application of low-carbon technologies to the building sector and developed viable financing models to support such projects. In the final intervention of the series, the project (iv) compiled and sharing knowledge resources comprising successful strategies for designing, financing, and implementing EC&EE technologies and methods in the context of public buildings.

c. The project's concept originated with the ideas of local and national stakeholders and was developed with their involvement.

The project effectively tackled financial obstacles and promoted capacity development through a series of actions and strategies galvanized by stakeholder input. Two notable ideas introduced by local and national stakeholders was that there was a "lack of comprehension regarding the design and implementation of EC&EE projects" and that the challenge of "overcoming financial barriers" could be accomplished by adopting a PPP approach. An illustrative instance of the importance of stakeholder input is the modification made to Component 4 within the project identification form (PIF) report after acknowledging the value of stakeholder feedback. The project's strategy was carefully designed to respond to the critical requirements of stakeholders and involved enhancing capacity and raising awareness among energy consumers, particularly those within the banking and finance sector. By focusing on this approach, the project aimed to enhance understanding of the benefits of energy projects, provide guidance on assessing project viability, and educate stakeholders about optimal ways to extend financial services to energy end-users across the residential, commercial/industrial, and government sectors. In addition, the project actively promoted the financing of EC&EE initiatives within public buildings through integrating PPP and engaging CSOs. These approaches, combined with other viable models, were collectively introduced to energy end-users in the public building sector, thereby effectively dismantling financial barriers to investment.

d. The project's objective dovetails with GEF strategic priorities, particularly GEF 5.

The foundation of this project is in harmony with pertinent GEF strategic goals and outcomes structure, notably CCM 1 Program 1. The PIF appropriately highlighted the factors driving global environmental deterioration, concerns regarding sustainability, market alterations and expansion, and novel approaches.

e. The project is linked to and in line with UNDP priorities and strategies for FSM.

The project contributed to several UNDP priorities, including the (i) UNDAF/Country Programme Outcome, (ii) Sub-Regional Programme Document, and (iii) UNDP Strategic Plan Output. In addition, it advanced the (i) UN Pacific Strategy (2018-2022) and its first outcome, which focuses on 'climate change, disaster resilience, and environmental protection' and (ii) UNDP Sub-Regional Programme Document (2018-2022), particularly its first outcome, which aims to enhance the resilience of both people and ecosystems in the Pacific to climate change, climate variability, and disasters, while at the same time bolstering environmental protection efforts. Furthermore,

the project supported the realization of UNDP Strategic Plan Output (1.5.1), which underscores the need to adopt measures to achieve widespread access to clean, affordable, and sustainable energy.

f. The project's objective supports the implementation of FSM's policy in the renewable energy sector.

The project explored various avenues aimed at increasing investments in introducing EC&EE practices to public buildings. The fundamental concept underlying this project was rooted in the idea that the lack of such investment stemmed from a lack of understanding and knowledge about how to execute such initiatives. It also assumed that the weak institutional framework for the government, private, and civil society sectors had hindered the sustained promotion and implementation of EC&EE practices in both public and private buildings. In response, the project devised effective strategies to tackle these challenges, primarily through capacity development and raising awareness, particularly among stakeholders in public buildings and energy consumers. Notably, Component 4 (outputs 4.a, 4.b, and 4.d) and Output 2.b (the EMRS pilot program) within Component 2 were designed to encourage the managers and administrators of pilot public buildings to uphold the policies and regulations governing EC&EE applications. These efforts aimed to see budget allocated for EC&EE projects. About the project strategy and its four components, stakeholders opined:

> *"On the whole, the project's strategy, along with its four components, is highly relevant as it addresses key barriers to improving EC&EE in public-sector buildings. The project deliberately selected a limited but strategically important set of public buildings and critical sections within these buildings to disseminate information about EC&EE technologies to a wide audience, a concept that is in itself innovative."*

The project also embraced a PPP model in alignment with FSM's renewable energy sector policy. Recognizing the substantial potential of the private sector in realizing sustainable renewable energy initiatives, the project strategically engaged private entities. For instance, during the execution of activities under Component 3, the involvement of private-sector entities such as engineering firms and suppliers of building materials was essential. Thus, these entities contributed to the design, planning, and engineering aspects of the project's building of demonstrations of the application of EC&EE technology. The project facilitated an environment for private entities to partake in the installation, operation, and monitoring of systems in demonstration buildings. In doing so, the project found that the establishment of connections with private commercial banks emerged as a source of financing for certain demonstrations. Moreover, private sector entities contributed to the replication and scaling up of demonstrations in other regions. Acknowledging the relatively limited involvement of FSM's private sector in EC&EE matters, the project effectively addressed this gap within the design of Component 4. By incorporating a capacity-development component, the project bridged the capacity and confidence gaps, empowering private entities to become pivotal participants in project design and implementation. In addition, this initiative encouraged the active entry of the private sector into the EC&EE sector.

Annex-11: Effectiveness

a. Extent of fulfilment of project objectives

The project's design and execution center around three notions: reducing GHG emissions, demonstrating and replicating technology, and enhancing FMS's policy and regulatory framework. In pursuit of these objectives, the project facilitated the installation of 73 solar hybrid AC units in 3 demo buildings and 50 units of inverter AC. 40 more solar hybrid are expected to be installed in other demo buildings by Oct, 2023 and 35 units of inverter AC are expected to be installed by Sep 30, 2023. It also introduced three distinct policy initiatives, and conducted a series of capacity-building activities for stakeholders involved in the development of policies, regulations, and guidelines.

The initial project outcomes and achievements were extracted from the project's PIRs and subsequently verified and updated during the evaluation mission. Other pertinent project-related information was obtained from the PMU. The current state of progress indicates that the project is on track to meet its objectives. Its success is largely due to the competition of the majority of project activities and the utilization of approximately 80% of the allocated funds. Furthermore, the project's ToC was effectively employed to support the attainment of project results, and outputs were closely aligned with the intended outcomes.

The cumulative incremental savings in fossil fuels resulting from the implementation of sustainable EE and low-carbon initiatives, measured in tons of oil equivalent (toe) diesel, currently stands at 950. The project's end-of-term target is set at 1042.1 toe diesel. Thanks to the support and investment from other development partners such as the WB, ADB, EU, and JICA in low-carbon power generation for utility authorities, the project's goals have already been met well before the expected timeline. The application of EC&EE technologies and techniques in the country's building sector has resulted in the creation of 12 new jobs, surpassing the initial target of 4 jobs. This achievement is attributed to the awarding of all procurement and installation contracts for the equipment

to five local contractors. Each of these contractors has contributed to job creation by hiring two personnel each to carry out the required work. Additionally, there has been job creation on the supply side of EC&EE equipment as well (see Annex-4).

In addition, the project has already surpassed its target for job creation in the application of EC&EE technologies, with five jobs created. Preliminary data gathered from public buildings indicate that the project has helped save money on electricity bills. It is worth noting that policy development is a time-consuming and intricate process, but that, thanks to the project's efforts, three distinct policies have been drafted and are currently in the process of being approved by the national congress and state legislatures. The PMU continues to collaborate with relevant stakeholders to secure approval for these policies. Notably, government officials involved in this policy process display a high level of commitment to enacting these policies as they recognize their significance in advancing sustainable energy conservation and efficiency initiatives. For this reason, there is a strong likelihood that the policy work will gain momentum and the project will successfully achieve its intended objectives.

c. Key risks that undermine to achieve the project objective and global environmental benefits

Several challenges have hindered the achievement of the project's objectives and realization of global environmental benefits. The vast distances between states have made it challenging, expensive, and time-consuming to mobilize expertise across states for immediate technical support. The remoteness of the islands also complicated logistics and increased overall management costs. The project's relatively short duration of 36 months, coupled with delays in human resource management, the pandemic, and sluggish processes for the procurement of equipment and fixtures, also slowed down its progress. In addition, the geographical remoteness of the islands delayed the delivery of equipment and air travel within the country proved costly.

According to project stakeholders, certain risks still persist. Local government support remains minimal, and policies and regulations have yet to be enacted as binding laws. That said, stakeholders displayed significant interest in and commitment to ensuring the ongoing O&M of equipment and the practice of EC&EE. This dedication has helped mitigate risks and propel the project forward.

In terms of challenges, Yap State officials noted that prior to the project's implementation, alternative energy sources such as solar or wind power were difficult to deploy as standalone systems due to the size and power demands of office buildings. Yap State Public Service Corporation, the sole provider of electricity in Yap State, operated independently under the state government with oversight from a board of directors. The government of Yap State was the sole shareholder, and the state governor nominated most of the board members with approval from the state legislature. Under the project’s scope of work, it replaced energy-inefficient and broken units, thereby contributing to the reliable supply and conservation of energy.

The project effectively employed various strategies and approaches to mitigate and manage constraints and bottlenecks. To tackle the challenge of there not being enough qualified vendors and suppliers within the country as well as the shortage of qualified contractors and laborers, the project leveraged UNDP's networks and years of experience and filled the gaps. Challenges involving political influence on the hiring of human resource were adeptly addressed through mutual agreement. For instance, when the recruitment of an EE Officer in Kosrae State was delayed due to political influence, the project management applied UNDP's transparent guidelines to reach a resolution using a win-win approach.

The project also successfully managed the logistical and communication challenges posed by the fact that demonstration sites were scattered across four different states. Technology was harnessed to enhance communication: frequent virtual meetings were held to keep in touch. There were some discrepancies between the planned and actual dates of key human resource management activities. For example, the project was to hire an energy efficiency officer for Yap in December 2020 but only did so in November 2021, thereby incurring a delay of approximately 10 months in project implementation. State-wise lockdowns in the FSM made it challenging to recruit candidates for essential project positions and restricted the project's forward momentum.

In addition, a turnover rate among PAB members, though limited in number, resulted in delays in organizing PAB meetings, which in turn delayed the making and operationalization of decisions. For example, Director of the Office of Planning and Budget in Yap State, left his position in November 2021 when he was nominated as a state senator. The position remained vacant for almost three months until, with the approval of the current governor, Chief of Planning, assumed the role of acting director in January 2022. Fortunately, these changes had no major impact on the continuity of the project’s approach and implementation methodology.

d. Key assumptions and impact drivers relevant to the achievement of global environmental benefits

The primary drivers impacting the achievement of global environmental benefits are the reduction of GHG emissions and the enhancement of air quality. The fundamental assumption underlying their achievement is the effectiveness of solar power in reducing energy consumption and improving EE. To attain its desired outcomes, the project made minor adjustments to its activities. For instance, the original plan to focus on public buildings such as Yap Fishery Authority and Yap Airport was extended by include the state administration building and radio station in December 2022. These changes were not arbitrary; they were driven by valid reasons. For instance, renovations were underway at the airport, and the hospital independently procured new AC units and an ice machine when the re-evaluation of new demonstration sites was delayed. As a result of these adjustments, the project increased the EE of the administration building and improved the radio station with more efficient AC units. This reallocation of funds also enabled the station to secure the resources it needed to activate an AM transmitter, thereby expanding its broadcasting reach.

In order to ensure transparency and accountability, the project organized various events and disseminated informational materials. For example, in Yap State, the project conducted two public hearings, established two feedback mechanisms for stakeholders, and presented key project highlights to executives and legislators. While the installation of project-related information boards in strategic locations, the provision of feedback boxes for stakeholders, and initiatives like radio announcements, campaign materials, and workshops, were not explicitly outlined in the project plan to promote accountability and transparency, the project proactively developed three radio announcements, utilized social media outlets, and conducted public hearings. The project also prepared mass text messages and leveraged social media platforms to disseminate project information. According to building managers, the project's overall success, despite the numerous challenges it faced, can be attributed to the valuable technical support received from various entities, including UNDP MCO in Suva, Fiji; UNDP Pacific Office; as well as the national and four state governments. For example, during a visit to the project's model building and radio station in July 2022, authorities from Yap State verified data indicating that they were paying too much for their cooling system and identified specific areas for improving it.

Annex-12: Before and after data in Yap

	Radio Station				*Administration Building*						
Read Date	**V6AI**	**KW/h Monthly**	**AM Room**	**KW/h Monthly**	**Comp Rm**	**Bldg A**	**Bldg B**	**Bldg C**	**Bldg D**	**Total**	
8/31/2023	$ 1,030.68	**1393**	$ 1,626.11	**2168.15**	$ 1,281.15	$ 599.66	$ 519.76	$ 426.80	$ 438.32	$ 3,265.69	**4354**
7/31/2023	$ 1,044.51	**1393**	$ 2,293.77	**3058.36**	$ 1,621.50	$ 598.90	$ 600.43	$ 459.07	$ 585.83	$ 3,865.73	**5154**
6/30/2023	$ 1,209.69	**1613**	$ 1,543.90	**2058.53**	$ 1,477.06	$ 913.13	$ 698.77	$ 644.99	$ 630.40	$ 4,364.35	**5819**
5/31/2023	$ 1,386.40	**1849**	$ 81.06	**108.08**	$ 2,060.20	$ 1,092.91	$ 1,585.39	$ 1,043.74	$ 1,314.95	$ 7,097.19	**9463**
4/30/2023	$ 1,665.30	**2220**	$ 5.00	**6.67**	$ 2,169.30	$ 1,198.17	$ 1,300.35	$ 1,108.28	$ 1,273.46	$ 7,049.56	**9399**
3/31/2023	$ 1,364.89	**1820**	$ 5.00	**6.67**	$ 1,881.19	$ 843.22	$ 1,095.99	$ 963.84	$ 1,249.65	$ 6,033.89	**8045**
2/28/2023	$ 1,663.76	**2218**	$ 5.77	**7.69**	$ 2,050.98	$ 992.27	$ 1,032.99	$ 1,133.63	$ 1,354.90	$ 6,564.77	**8753**
1/31/2023	$ 1,459.39	**1946**	$ 5.00	**6.67**	$ 2,153.17	$ 975.36	$ 1,071.40	$ 918.51	$ 939.25	$ 6,057.69	**8077**
12/31/2022	$ 1,660.69	**2214**	$ 5.77	**7.69**	$ 2,227.69	$ 931.57	$ 1,237.35	$ 1,016.08	$ 1,106.74	$ 6,519.43	**8693**
11/30/2022	$ 1,888.10	**2517**		**0.00**	$ 2,283.78	$ 827.85	$ 1,235.82	$ 885.47	$ 1,071.40	$ 6,304.32	**8406**
10/31/2022	$ 1,984.14	**2646**		**0.00**	$ 2,377.51	$ 1,215.07	$ 1,049.12	$ 995.34	$ 1,011.47	$ 6,648.51	**8865**
9/30/2022	$ 2,063.28	**2751**		**0.00**	$ 2,782.40	$ 1,114.43	$ 1,034.52	$ 1,168.21	$ 1,450.17	$ 7,549.73	**10066**
8/31/2022	$ 1,655.31	**2207**		**0.00**	$ 2,586.49	$ 1,275.00	$ 1,016.08	$ 936.95	$ 1,304.96	$ 7,119.48	**9493**
7/31/2022	$ 1,680.66	**2241**		**0.00**	$ 2,877.67	$ 1,132.10	$ 852.43	$ 1,096.75	$ 1,467.84	$ 7,426.79	**9902**
6/30/2022	$ 1,908.08	**2544**		**0.00**	$ 2,601.09	$ 1,129.79	$ 830.15	$ 1,086.00	$ 2,021.02	$ 7,668.05	**10224**
5/31/2022	$ 1,765.18	**2354**		**0.00**	$ 2,753.21	$ 976.90	$ 1,083.69	$ 1,069.86	$ 1,650.70	$ 7,534.36	**10046**
4/30/2022	$ 1,987.21	**2650**		**0.00**	$ 2,430.52	$ 1,138.24	$ 915.44	$ 1,203.55	$ 1,752.11	$ 7,439.86	**9920**
3/31/2022	$ 1,822.80	**2430**		**0.00**	$ 2,354.46	$ 961.53	$ 787.13	$ 930.03	$ 1,755.19	$ 6,788.34	**9051**
2/28/2022	$ 1,669.91	**2227**		**0.00**	$ 2,318.35	$ 840.91	$ 1,261.94	$ 871.64	$ 1,849.69	$ 7,142.53	**9523**
1/31/2022	$ 1,787.46	**2383**		**0.00**	$ 2,204.64	$ 774.07	$ 1,384.87	$ 802.50	$ 1,513.94	$ 6,680.02	**8907**
12/31/2021	$ 2,034.85	**2713**		**0.00**	$ 2,120.13	$ 1,113.66	$ 1,102.13	$ 923.89	$ 1,418.67	$ 6,678.48	**8905**
11/30/2021	$ 1,958.02	**2611**		**0.00**	$ 2,379.05	$ 1,172.05	$ 1,215.07	$ 993.03	$ 1,879.65	$ 7,638.85	**10185**
10/31/2021	$ 1,934.97	**2580**		**0.00**	$ 2,138.57	$ 1,029.91	$ 1,288.06	$ 1,004.56	$ 1,821.26	$ 7,282.36	**9710**
9/30/2021	$ 1,912.69	**2550**		**0.00**	$ 2,072.50	$ 995.34	$ 1,347.99	$ 1,008.40	$ 1,946.49	$ 7,370.72	**9828**
8/31/2021	$ 1,769.79	**2360**		**0.00**	$ 1,939.58	$ 943.86	$ 1,249.65	$ 986.12	$ 1,981.07	$ 7,100.28	**9467**
7/31/2021	$ 1,738.28	**2318**		**0.00**	$ 1,938.81	$ 1,073.71	$ 1,347.99	$ 839.37	$ 2,104.76	$ 7,304.64	**9740**

6/30/2021	$ 1,497.81	**1997**		**0.00**	$ 2,108.61	$ 1,109.82	$ 1,523.16	$ 793.28	$ 1,982.60	$ 7,517.47	**10023**
5/31/2021	$ 2,056.36	**2742**	$ 5.00	**6.67**	$ 2,090.17	$ 1,221.99	$ 1,428.66	$ 710.30	$ 1,755.96	$ 7,207.08	**9609**
4/30/2021	$ 1,524.70	**2033**	$ 593.52	**791.36**	$ 2,293.77	$ 973.06	$ 1,477.06	$ 538.20	$ 1,704.48	$ 6,986.57	**9315**
3/31/2021	$ 1,410.99	**1881**	$ 1,712.93	**2283.91**	$ 2,122.43	$ 933.87	$ 1,352.60	$ 863.96	$ 1,692.96	$ 6,965.82	**9288**
2/28/2021	$ 1,742.13	**2323**	$ 3,180.38	**4240.51**	$ 2,101.69	$ 1,011.47	$ 1,425.59	$ 784.82	$ 1,893.48	$ 7,217.05	**9623**
1/31/2021	$ 1,211.23	**1615**	$ 2,825.43	**3767.24**	$ 1,833.55	$ 836.30	$ 981.51	$ 551.26	$ 1,550.82	$ 5,753.44	**7671**
12/31/2020	$ 1,929.59	**2573**	$ 3,516.90	**4689.20**	$ 2,252.28	$ 1,135.17	$ 1,394.09	$ 853.20	$ 1,971.85	$ 7,606.59	**10142**
11/30/2020	$ 1,738.28	**2318**	$ 3,097.41	**4129.88**	$ 1,823.57	$ 1,052.19	$ 1,352.60	$ 754.86	$ 1,709.09	$ 6,692.31	**8923**
10/31/2020	$ 1,714.47	**2286**	$ 3,324.06	**4432.08**	$ 1,897.32	$ 1,169.74	$ 1,470.15	$ 824.78	$ 1,822.03	$ 7,184.02	**9579**
9/30/2020	$ 1,632.26	**2176**	$ 3,073.59	**4098.12**	$ 2,132.42	$ 1,252.72	$ 1,344.15	$ 947.70	$ 2,409.01	$ 8,086.00	**10781**
8/31/2020	$ 1,323.40	**1765**	$ 3,089.72	**4119.63**	$ 1,961.09	$ 1,228.90	$ 1,258.87	$ 837.84	$ 2,094.78	$ 7,381.48	**9842**
7/31/2020	$ 1,583.86	**2112**	$ 3,378.61	**4504.81**	$ 1,868.13	$ 1,312.65	$ 1,231.21	$ 866.26	$ 2,018.71	$ 7,296.96	**9729**
6/30/2020	$ 1,568.49	**2091**	$ 3,219.57	**4292.76**	$ 1,765.18	$ 1,328.01	$ 1,312.65	$ 820.17	$ 2,011.80	$ 7,237.81	**9650**
5/31/2020	$ 1,682.20	**2243**	$ 3,685.93	**4914.57**	$ 1,592.31	$ 1,164.36	$ 1,378.72	$ 857.04	$ 1,788.22	$ 6,780.65	**9041**
4/30/2020	$ 1,627.65	**2170**	$ 3,384.75	**4513.00**	$ 1,599.22	$ 1,388.71	$ 1,621.50	$ 868.57	$ 1,902.70	$ 7,380.70	**9841**
3/31/2020	$ 1,390.24	**1854**	$ 3,297.17	**4396.23**	$ 1,461.70	$ 1,199.71	$ 1,379.49	$ 675.73	$ 1,474.76	$ 6,191.39	**8255**
2/29/2020	$ 1,422.51	**1897**	$ 3,537.64	**4716.85**	$ 1,471.68	$ 1,251.18	$ 1,534.69	$ 761.01	$ 1,584.62	$ 6,603.18	**8804**
1/31/2020	$ 1,258.87	**1678**	$ 3,077.43	**4103.24**	$ 1,221.22	$ 1,016.08	$ 1,364.12	$ 638.85	$ 1,331.85	$ 5,572.12	**7429**
12/31/2019	$ 1,422.51	**1897**	$ 3,301.78	**4402.37**	$ 1,256.56	$ 1,153.61	$ 1,392.55	$ 794.81	$ 1,437.88	$ 6,035.41	**8047**
11/30/2019	$ 1,246.57	**1662**	$ 3,044.39	**4059.19**	$ 1,524.70	$ 1,194.33	$ 1,367.96	$ 850.90	$ 1,586.93	$ 6,524.82	**8700**
10/31/2019	$ 1,395.62	**1861**	$ 3,017.50	**4023.33**	$ 1,483.21	$ 1,225.83	$ 1,285.76	$ 805.57	$ 1,685.27	$ 6,485.64	**8648**

Annex-13: Evaluation Question Matrix

Evaluative Criteria Questions	Indicators	Sources	Methodology
1. Relevance: *How does the project relate to the main objectives of the GEF Focal area, and to the environment and development priorities at the local, regional and national level?*			
1.1 Does the project's objective align with the priorities of the government of FSM and local communities?	• Level of coherence between project objective and stated priorities of local stakeholders	• Local stakeholders • Document review of local development • Strategies, environmental policies	• Interviews • Desk review
1.2 Does the project's objective fit within the national environment and development priorities of FSM?	• Level of coherence between project objective and national policy priorities and strategies, as stated in project document	• National policy documents, such as National Biodiversity Strategy and Action Plan, • National Capacity Self-Assessment, etc.	• Desk review • Interviews with government's stakeholders
1.3 Did the project concept originate from local or national stakeholders, and/or were relevant stakeholders sufficiently involved in project development?	• Level of involvement of local and national stakeholders in project development (number of meetings held, project development processes incorporating stakeholder input, etc.)	• Project staff • Local and national stakeholders • Project documents	• Field visit interviews • Desk review
1.4 Does the project objective fit GEF strategic priorities? *(GEF strategic priority documents for period when project was approved would simply be GEF 5 strategic priority)*	• Level of coherence between project objective and GEF strategic priorities (including alignment of relevant focal area indicators)	• GEF strategic priority documents (when project was approved) • Current GEF strategic priority documents	• Desk review
1.5 Was the project linked with and in line with UNDP priorities and strategies for the country?	• Level of coherence between project objective and design with UNDAF, CPD	• UNDP strategic priority documents	• Desk review
1.6 Does the project's objective support implementation of relevant policy provisions?	• Linkages between project objective and elements of the CBD, such as key articles and programs of work	• CBD website • National Biodiversity Strategy and Action Plan	• Desk review
2. Effectiveness: *To what extent have the expected outcomes and objectives of the project been achieved?*			
2.1 Are the project objectives likely to be met? To what extent are they likely to be met?	• Level of progress toward project indicator targets relative to expected level at current point of implementation	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
2.2 What are the key factors contributing to project success (achievement) or underachievement?	• Level of documentation of and preparation for project risks, assumptions and impact drivers	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
2.3 What are the key risks and barriers that remain to achieve the project objective and generate global environmental benefits?	• Presence, assessment of, and preparation for expected risks, assumptions and impact drivers	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
2.4 Are the key assumptions and impact drivers relevant to the achievement of Global Environmental benefits likely to be met?	• Actions undertaken to address key assumptions and target impact drivers	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
3. Efficiency: *Was the project implemented efficiently, in line with international and national norms and standards?*			
3.1 Is the project cost-effective?	• Quality and adequacy of financial management procedures (in line with UNDP and national policies, legislation, and procedures) • Financial delivery rate vs. expected rate • Management costs as a percentage of total costs	• Project documents • Project staff	• Desk review • Interviews with project staff
3.2 Are expenditures in line with international standards and norms?	• Cost of project inputs and outputs relative to norms and standards for GEF projects in the country or region	• Project documents • Project staff	• Desk review • Interviews with project staff

3.3 Is the project implementation approach efficient for delivering the planned project results?	• Adequacy of implementation structure and mechanisms for coordination and communication • Planned and actual level of human resources available • Extent and quality of engagement with relevant partners/partnerships • Quality and adequacy of project monitoring mechanisms (oversight bodies' input, quality and timeliness of reporting, etc.)	• Project documents • National and local stakeholders • Project staff	• Desk review • Interviews with project staff • Interviews with national and local stakeholders
3.4 Is the project implementation delayed? If so, has that affected cost-effectiveness?	• Project milestones in time • Planned results affected by delays • Required project adaptive management measures related to delays	• Project documents • Project staff	• Desk review • Interviews with project staff
3.5 What is the contribution of cash and in-kind co-financing to project implementation?	• Level of cash and in-kind co-financing relative to expected level	• Project documents • Project staff	• Desk review • Interviews with project staff
3.6 To what extent is the project leveraging additional resources?	• Amount of resources leveraged relative to project budget	• Project documents • Project staff	• Desk review • Interviews with project staff
4. Sustainability: *To what extent are there financial, institutional, socio-political, and/or environmental risks to sustaining long-term project results?*			
4.1 To what extent are project results likely to be dependent on continued financial support? What is the likelihood that any required financial resources will be available to sustain the project results once the GEF assistance ends?	• Financial requirements for maintenance of project benefits • Level of expected financial resources available to support maintenance of project benefits • Potential for additional financial resources to support maintenance of project benefits	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
4.2 Do relevant stakeholders have or are likely to achieve an adequate level of "ownership" of results, to have the interest in ensuring that project benefits are maintained?	• Level of initiative and engagement of relevant stakeholders in project activities and results	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
4.3 Do relevant stakeholders have the necessary technical capacity to ensure that project benefits are maintained?	• Level of technical capacity of relevant stakeholders relative to level required to sustain project benefits	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
4.4 To what extent are the project results dependent on socio-political factors?	• Existence of socio-political risks to project benefits	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
4.5 To what extent are the project results dependent on issues relating to institutional frameworks and governance?	• Existence of institutional and governance risks to project benefits	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
4.6 Are there any environmental risks that can undermine the future flow of project impacts and Global Environmental benefits?	• Existence of environmental risks to project benefits	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
5. Gender equality and women's empowerment: *How did the project contribute to gender equality and women's empowerment?*			
5.1 How did the project contribute to gender equality and women's empowerment?	• Level of progress of gender action plan and gender indicators in results framework	• Project documents • Project staff • Project stakeholders	• Desk review • Interviews • Field visits

5.2 In what ways did the project's gender results advance or contribute to the project's outcomes?	• Existence of logical linkages between gender results and project outcomes and impacts	• Project documents • Project staff • Project stakeholders	• Desk review • Interviews • Field visits
6. Impact: *Are there indications that the project has contributed to, or enabled progress toward reduced environmental stress and/or improved ecological status?*			
6.1 Have the planned outputs been produced? Have they contributed to the project outcomes and objectives?	• Level of project implementation progress relative to expected level at current stage of implementation • Existence of logical linkages between project outputs and outcomes/impacts	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
6.2 Are the anticipated outcomes likely to be achieved? Are the outcomes likely to contribute to the achievement of the project objective?	• Existence of logical linkages between project outcomes and impacts	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
6.3 Are impact level results likely to be achieved? Are the likely to be at the scale sufficient to be considered Global Environmental benefits?	• Environmental indicators • Level of progress through the project's Theory of Change	• Project documents • Project staff • Project stakeholders	• Field visit interviews • Desk review
7. Cross-cutting and UNDP mainstreaming issues			
7.1 How were effects on local populations considered in project design and implementation?	• Positive or negative effects of the project on local populations	• Project document • Progress reports • Monitoring reports	• Desk review • Interviews • Field visits
Partnership: • How the partnerships affected in the project achievement, and how might this be built upon in the future? • Have the ways of working with the partner and the support to the partner been effective and did they contribute to the project's achievements? • How does partnership with local government work? Does it create synergies or difficulties? What type of partnership building mechanism is necessary for future partnership?	• Level of achievement (as laid out in the log-frame, target vs. achievements) • Achievement of outputs (qualitative, quantitative) and description of activities • Achievements on partnership, GESI and human rights	• Project document • Review of fund flow and management cost at project level • MIS and GESI data • Review of project's generated case studies	• Interviews • Pros and cons analysis-partnership with government • Document and report analysis (including partnership guideline)
Gender equality and Social Inclusion • To what extent have issues of gender and marginalized groups been addressed in the design, implementation and monitoring of the project? • To what extent the project approach was effective in promoting gender equality and social inclusion - particularly focusing on the marginalized and the poor through livelihood interventions? • To what extent has the project promoted positive changes of women, differently abled people and marginalized group? Were there any unintended effects?	• Level of achievement (as laid out in the log-frame, target vs. achievements) • Achievement of outputs (qualitative, quantitative) and description of activities • Achievements on partnership, GESI and human rights	• Project document • Review of fund flow and management cost at project level • MIS and GESI data • Review of project's generated case studies	• Interviews • Pros and cons analysis-partnership with government • Document and report analysis (including partnership guideline)
Human rights	• Level of achievement (as laid out in the log-frame, target vs. achievements)	• Project document	• Interviews

• To what extent have ethnic minorities, physically challenged, women and other disadvantaged and marginalized groups benefitted from the work of the project and with what impact? • To what extent have project integrated "human rights based approach" in the design, implementation and monitoring of the project? • Have the resources been used in an efficient way to address human rights in the implementation (e.g. participation of targeted stakeholders, collection of disaggregated data, etc.)?	• Achievement of outputs (qualitative, quantitative) and description of activities • Achievements on partnership, GESI and human rights	• Review of fund flow and management cost at project level • MIS and GESI data • Review of project's generated case studies	• Pros and cons analysis-partnership with government • Document and report analysis (including partnership guideline)

Annex-14: Questionnaire used and summary of results

This is a comprehensive list serving the TE team to gather the required information for all criteria to be evaluated. The questions will be selected and adjusted to the context of the interview/discussion.

Introductory questions

- What is your involvement, role and responsibility with the project?
- How long have you been involved? Were you involved in the design process?
- From your perspective, what are key achievements, and key challenges for implementation and sustainability?

1. Project strategy

1.1. Project design

- How relevant were the overall design and approaches of the project?
- Were lessons from other relevant projects properly incorporated into the project design?
- Have the ways of working with the partner and the support to the partner been effective and did they contribute to the project's achievements?
- To what extent was the project able to address the needs and priorities of the target groups, watersheds, and communities?
- How the project does addresses country priorities? Was the project concept in line with the national sector development priorities and plans of the country?
- To what extend is project ownership realized at government of FSM level?
- Are the assumptions underlying the project design valid and unchanged? If not, what was/is the effect on achieving project results?
- Has the context changed?
- To what extent were gender issues addressed in project design?
- To what extent were relevant gender issues (e.g. the impact of the project on gender equality in the country, involvement of women's groups, engaging women in project activities) raised in the Project Document?
- To what extent were perspectives of those who would be affected by project decisions, those who could affect the outcomes, and those who could contribute information or other resources to the process, taken into account during project design processes?
- To what extent is the project the best route towards expected results?

1.2. Project results framework/log-frame

- To what extent are how the end-of-project targets are (Specific, Measurable, Attainable, Relevant, Time-bound) "SMART"?
- Are the project's objectives and outcomes or components clear, practical, and feasible within its time frame?
- Are broader development and gender aspects of the project being monitored effectively?
- Do M&E procedures include sex-disaggregated indicators and indicators that capture development benefits?
- Has progress so far led to - or could in the future - catalyze beneficial development effects (i.e. income generation, gender equality and women's empowerment, improved governance etc...) that should be included in the project results framework and monitored on an annual basis?

2. Progress towards results

- To what extent have the expected outcomes and objectives of the project been achieved thus far? against end of project targets?
- To what extent did the intervention bring benefits to climate vulnerable people, ultra poor, women, and people from marginalized community?
- How/does the project contribute its three outcome?
- To what extent have issues of gender and marginalised groups been addressed in the design, implementation and monitoring of the project?
- How effective has the project been in responding to the needs of the beneficiaries, and what results were achieved?

- Are Core Indicators (GEF Tracking Tool) measured/recorded? What is the progress/change?
- Are there significant barriers in achieving the project objectives? How/can they be overcome?
- What aspects of the project have already been successful? How/can they be further expanded?

3. Assessment of M&E and learning system

- Was the information provided by the M&E system was used to improve performance and to adapt to changing needs; Are there any annual work plans?
- To what extent the M&E and learning system captures GESI related information?
- Was M&E was sufficiently budgeted for at the project planning stage and whether M&E was adequately funded and in a timely manner during implementation?
- Was the information provided by the M&E system (annual work plans, other) was used to improve performance and to adapt to changing needs?

4. Project implementation and adaptive management

4.1. Management arrangements

- Has project management as outlined in the Project Document been effective? Have changes been made and are they effective?
- Are responsibilities and reporting lines clear? Is decision-making transparent and undertaken in a timely manner?
- How efficiently were the resources including human, material and financial resources used to achieve results/in a timely manner?
- To what extent was the existing project management structure appropriate and efficient in generating the expected results?
- What is the quality of support provided by the GEF Partner Agency (i.e. UNDP)?
- Do the implementing partner and/or UNDP and other partners have the capacity to deliver benefits to or involve women? If yes, how?
- Is execution by the executing agency/implementing partner(s) effective? What have been challenges? Have changes been made?
- What is the gender balance of project staff? What steps have been taken to ensure gender balance in project staff?
- What is the gender balance of the Project Board? What steps have been taken to ensure gender balance in the Project Board?
- To what extent has the project implementation been able to adapt to any changing conditions thus far?

4.2. Work planning

- Were there delays in project start-up and implementation? What were the causes, have they been resolved?
- Are work-planning processes results-based?
- To what extent/how is the PRF/logframe used as a management tool?
- Have changes been made to it since project start?

4.3. Finance and co-finance

- Were there changes to fund allocations as a result of budget revisions? Were the revisions appropriate and relevant?
- Are there appropriate financial controls, including reporting and planning, that allow management to make informed decisions regarding the budget and allow for timely flow of funds?
- If there was a difference in the level of expected co-financing and the co-financing actually realized, what were the reasons for the variance? Did the extent of materialization of co-financing affect project outcomes and/or sustainability, and, if so, in what ways and through what causal linkages?
- Is co-financing being used strategically to help the objectives of the project?
- Is the project team meeting with all co-financing partners regularly in order to align financing priorities and annual work plans?

4.4 Financial planning and procurement

- Did the project have appropriate financial controls, including reporting and planning, that allowed management to make informed decisions regarding the budget and allowed for timely flow of funds?

4.5. Project-level monitoring and evaluation systems

- Do the monitoring tools currently used provide the necessary information?
- Do they involve key partners?
- Are they aligned or mainstreamed with national systems?
- Do they use existing information?
- Are they efficient?
- Are they cost-effective?
- Are additional tools required?
- Could they be made more participatory and inclusive?
- Are sufficient resources being allocated to monitoring and evaluation? Are these resources being allocated effectively?
- To what extent are project-level monitoring and evaluation systems, reporting, and project communications supporting the project's implementation?

4.6. Stakeholder engagement

- Has the project developed and leveraged the necessary and appropriate partnerships with direct and tangential stakeholders?
- Do local and national government stakeholders support the objectives of the project?
- To what extent has stakeholder involvement and public awareness contributed to the progress towards achievement of project objectives?
- How does the project engage women? Is the project likely to have the same positive and/or negative effects on women and men? Identify, if possible, legal, cultural, or religious constraints on women's participation in the project. What can the project do to enhance its gender benefits?

4.7. Social and environmental safeguards

- To what extent has progress been made in the implementation of social and environmental management measures?
- Have there been changes to the overall project risk rating and/or the identified types of risks as outlined at the CEO Endorsement stage?
- Are the risks identified in the project's most current SESP valid/capture all risks?
- Are risks ratings valid? Are any revisions needed?
- To what extent have the project's social and environmental management measures as outlined in the SESP been implemented, (if any, if applicable)? Were there revisions to those measures? (*what was the version of UNDP's safeguards policy at time of project approval*)

4.8. Reporting system

- To what extent/how have adaptive management changes been reported by the project management and shared with the Project Board?
- How well do the Project team and partners undertake and fulfil GEF reporting requirements (i.e. how have they addressed poorly-rated PIRs, if applicable?)
- To what extent/how have lessons derived from the adaptive management process been documented and shared with key partners, and internalized by partners?

4.9. Communications and knowledge management

- Is communication (internal project communication) with stakeholders regular and effective?
- Are there key stakeholders left out of communication? Are there feedback mechanisms when communication is received? Does this communication with stakeholders contribute to their awareness of project outcomes and activities and investment in the sustainability of project results?
- Are proper means of communication (external project communication) established or being established to express the project progress and intended impact to the public?
- Is website and other online presence?
- Did the project implement appropriate outreach and public awareness campaigns?
- What knowledge management activities have been undertaken?
- What knowledge products have been developed/published?
- In line with knowledge management approach in project design/ProDoc?

5. Sustainability

- To what extent are the benefits of the project likely to be sustained after the completion of this project?
- How were capacities strengthened at the individual and organizational level (including contributing factors and constraints)?
- To what extent are the social and environmental safeguard measures adopted in project implementation, and how effective are they?
- To what extent are there financial, institutional, socio-economic, and/or environmental risks to sustaining long-term project results?
- Are risks identified in the Project Document, Annual Project Review/PIRs and the ATLAS Risk Register the most important risks, and are the current risk ratings appropriate and up to date?
- What changes should be made, if any?
- What are key project contributions to sustainable development benefits, as well as global environmental benefits?
- What are the key factors that may require attention to enhance sustainability of project outcomes and the potential for replication of the approach?

5.1. Financial sustainability

- What is the likelihood of financial and economic resources being/not being available once the GEF assistance ends to sustain project outcomes?
- What are potential funding sources, including from public and private sectors, income generating activities, and other funding?

5.2. Socio-economic sustainability

- Are there any social or political risks that may jeopardize sustainability of project outcomes?
- Is stakeholder ownership (government and other) sufficient to sustain project outcomes/benefits?
- To what extent consider key stakeholders it in their interest that project benefits will continue to flow?
- Is there sufficient public and stakeholder awareness in support of the long-term objectives of the project?
- Are lessons learned being documented by the Project team on a continual basis and shared/ transferred to appropriate parties/stakeholders who could learn from the project and potentially replicate and/or scale it in the future?

5.3. Institutional and governance sustainability:

- Do the legal frameworks, policies, governance structures and processes support (or jeopardize) sustenance of project benefits?
- Are the required systems, mechanisms for accountability, transparency, and technical knowledge transfer in place?

5.4. Environmental sustainability

- Are there any environmental risks that may jeopardize sustenance of project outcomes?

Annex-15: GEF tracking tools

GEF 7 Core Indicator Worksheet **Annex B**

Core Indicator 1	**Terrestrial protected areas created or under improved management for conservation and sustainable use**					***(Hectares)***
			Hectares (1.1+1.2)			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 1.1	Terrestrial protected areas newly created					
Name of Protected Area	WDPA ID	IUCN category	Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE

		(select)					
		(select)					
		Sum					
Indicator 1.2	Terrestrial protected areas under improved management effectiveness						
Name of Protected Area	WDPA ID	IUCN category	Hectares	METT Score			
				Baseline		Achieved	
					Endorsement	MTR	TE
		(select)					
		(select)					
		Sum					
Core Indicator 2	**Marine protected areas created or under improved management for conservation and sustainable use**						***(Hectares)***
				Hectares (2.1+2.2)			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	*TE*
Indicator 2.1	Marine protected areas newly created						
Name of Protected Area	WDPA ID	IUCN category		Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
		(select)					
		(select)					
		Sum					
Indicator 2.2	Marine protected areas under improved management effectiveness						
Name of Protected Area	WDPA ID	IUCN category	Hectares	METT Score			
				Baseline		Achieved	
				PIF stage	Endorsement	MTR	TE
		(select)					
		(select)					
		Sum					
Core Indicator 3	**Area of land restored**						***(Hectares)***
				Hectares (3.1+ 3.2+3.3+3.4)			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.1	Area of de graded agricultural land restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.2	Area of for est and forest land restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.3	Area of natural grass and shrub lands restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.4	Area of wetlands (including estuaries, mangroves) re stored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE

Core Indicator 4	**Area of landscapes under improved practices (hectares; excluding protected areas)**					***(Hectares)***
			Hectares (4.1+ 4.2+4.3+4.4)			
			Expected		Expected	
			PIF stage	Endorsement	MTR	TE
Indicator 4.1	Area of landscapes under improve d management to benefit biodiversity					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 4.2	Area of landscapes that meet national or international third-party certification that incorporate s biodiversity considerations					
Third party certification(s):			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 4.3	Area of landscapes under sustainable land management in production systems					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 4.4	Area of High Conservation Value Forest (HCVF) loss avoided					
Include documentation that justifies HCVF			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Core Indicator 5	**Area of marine habitat under improved practices to benefit biodiversity**					***(Hectares)***
Indicator 5.1	Number of fisheries that meet national or international third-party certification that incorporates biodiversity considerations					
Third party certification(s):			Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 5.2	Number of large marine ecosystems (LMEs) with reduced pollution and hypoxial					
			Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 5.3	Amount of Marine Litter Avoided					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Core Indicator 6	**Greenhouse gas emission mitigated**					***(Metric tons of CO_2e)***
			Expected metric tons of CO_2e (6.1+6.2)			
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)		78,080	95,370	*0*	320,000
	Expected CO2e (indirect)		222,220	286,109	*0*	1,988,229
Indicator 6.1	Carbon sequestered or emissions a voided in the AFO LU sector					
			Expected metric tons of CO_2e			
			PIF stage	Endorsement	MTR	TE

	Expected CO2e (direct)		0	0	*0*	
	Expected CO2e (indirect)		0	0	*0*	
	Anticipated start year of accounting		*NA*	*NA*	*NA*	
	Duration of accounting					
Indicator 6.2	Emissions avoided Outside AFOL U					
			Expected metric tons of CO_2e			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)		78,080	95,370	*0*	320,000
	Expected CO2e (indirect)		222,220	286,109	*0*	960,000
	Anticipated start year of accounting		2030	*2032*	*NA*	
	Duration of accounting					
Indicator 6.3	Energy saved					
			M J			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
			330,278	403,415	*0*	552,286
			939,991	1,210,241	*0*	1,988,229
Indicator 6.4	Increase in installed renewable energy capacity per technology					
		Technology	Capacity (MW)			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
		Solar Thermal		*0.05*	*0.05*	0.1
		(select)				
Core Indicator 7	**Number of shared water ecosystems (fresh or marine) under ne w or improved cooperative management**					***(Number)***
Indicator 7.1	Level of Trans boundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation					
		Shared water ecosystem	Rating (scale 1-4)			
			PIF stage	Endorsement	MTR	TE
Indicator 7.2	Level of Regional Legal Agreements and Regional Management Institutions to support its implementation					
		Shared water ecosystem	Rating (scale 1-4)			
			PIF stage	Endorsement	MTR	TE
Indicator 7.3	Level of National/Local reforms and active participation of Inter-Ministerial Committees					
		Shared water ecosystem	Rating (scale 1-4)			
			PIF stage	Endorsement	MTR	TE
Indicator 7.4	Level of en gagement in IWLEAR N through participation and delivery of key products					
		Shared water ecosystem	Rating (scale 1-4)			
			Rating		Rating	
			PIF stage	Endorsement	MTR	TE
Core Indicator 8	**Globally over-exploited fisheries Moved to more sustainable levels**					***(Metric Tons)***
Fishery Details			Metric Tons			
			PIF stage	Endorsement	MTR	TE
Core Indicator 9	**Reduction , disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products**					***(Metric Tons)***
			Metric Tons (9.1+9.2+9.3)			
			Expected		Achieved	
			PIF stage	PIF stage	MTR	TE

Indicator 9.1	Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)					
POPs type			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
(select)	(select)	(select)				
(select)	(select)	(select)				
(select)	(select)	(select)				
Indicator 9.2	Quantity o f mercury reduced					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.3	Hydrochloroflurocarbons (HCFC) Reduced/Phased out					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.4	Number of countries with legislation and policy implemented to control chemicals and waste					
			Number of Countries			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.5	Number o f low-chemical/non-chemical systems implemented particularly in food production , manufacturing and cities					
		Technology	Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.6	Quantity o f POPs/Mercury containing materials and products directly avoided					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	PIF stage	Endorsement
Core Indicator 10	**Reduction , avoidance of emissions of POPs to air from point and nonpoint sources**					***(grams of toxic equivalent gTEQ)***
Indicator 10.1	Number of countries with legislation and policy implemented to control emissions of POPs to air					
			Number of Countries			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 10.2	Number of emission control technologies/practices implemented					
			Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Core Indicator 11	**Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment**					***(Number)***
			Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
		Female		1,300	*0*	
		Male		1,200	*0*	
		Total		*2,500*	*0*	

Annex-16: Signed UNEG Code of Conduct form

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings, and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.
8. Must ensure that independence of judgement is maintained, and that evaluation findings and recommendations are independently presented.
9. Must confirm that they have not been involved in designing, executing, or advising on the project being evaluated and did not carry out the project's Mid-Term Review.

Evaluation Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN system:

Name of Evaluator: Dr. Dhruba Gautam
Name of Consultancy/organization: N/A

I confirm that I have received and understood and will abide by the United national Code of Conduct for Evaluators:

Signed at: Kathmandu on Oct 18, 2023

Signature: 

Annex-17: Signed TE Report Clearance form

Terminal Evaluation Report for Micronesia Public Sector Buildings Energy Efficiency (MPSBEE) Project
Reviewed and Cleared By:
Commissioning Unit (M&E Focal Point)
Name:
Signature: Date:
Regional Technical Advisor (Nature, Climate and Energy)
Name:
Signature: _____ Date:

Annex-18: TE Audit Trail (in a separate file)