



GEF-6 PROJECT INFORMATION FORM (PIF)

PROJECT TYPE: Medium-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	Micronesia Public Sector Buildings Energy Efficiency (MPSBEE) Project		
Country(ies):	Federated States of Micronesia (FSM)	GEF Project ID:	9863
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5997
Other Executing Partner(s):	In FSM - Division of Energy, Department of Resources and Development (DE/DRD)	Submission Date:	7 Jun 2017
		Resubmission Date:	24 Jul 2017
		Resubmission Date:	11 Aug 2017
GEF Focal Area(s):	Climate Change	Project Duration (Mos)	36
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP	<input type="checkbox"/>
Name of Parent Program:	N/A	Agency Fee (US\$)	168,766

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES:

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	GEF Project Financing, US\$	Co-financing, US\$
CC-1; Program 1: Promote timely development, demonstration and financing of low carbon technologies and mitigation options	GEFTF	1,776,484	3,500,000
Total Project Cost	GEFTF	1,776,484	3,500,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: Improved application of energy conserving and energy efficient techniques and practices in the design, retrofit, operation and maintenance of public sector buildings¹ in FSM.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Project Financing US\$	Co-Financing US\$
1. EC&EE Policies & Regulations Improvements in Public Sector Buildings	TA	Enforcement of policies and rules and regulations on the energy efficient and energy conserving design, retrofit, operation and maintenance of	<ul style="list-style-type: none"> Completed comprehensive policy research, impact analyses and assessment of applicable policies and regulations, institutional frameworks to facilitate cost-effective applications of EC&EE technologies, techniques and practices in the buildings sector. Approved and enforced policies, policy instruments, rules & regulations and standards on, and institutional arrangements for the promotion and 	GEFTF	75,000	150,000

¹These are government buildings, which can be office, hospital, school and other government-owned and operated buildings. The buildings typically account for 19% of the total electricity consumption in the country. Most of the big and multi-storey buildings in the country are government buildings.

		public sector buildings	<p>application of EC&EE technologies in the buildings sector.</p> <ul style="list-style-type: none"> • Approved and enforced national building energy code and standards that incorporates specifications for EE features and EC&EE technology applications in the design, construction, retrofit and operation of new and existing buildings. • Completed evaluation of enforced EC&EE policies, regulations, standards and adopted institutional framework; and approved follow-up plan for the enhancement of EC&EE policies and programs in the buildings sector. 			
2. Energy Performance Monitoring and Evaluation of Public Sector Buildings	TA	Enhanced management and monitoring of the energy performance of public sector buildings	<ul style="list-style-type: none"> • Established and operational building energy audit system, including completed capacity development in the planning and conduct of building energy audits, and completed energy audits of selected public sector buildings. • Established and operational buildings energy (supply and consumption) monitoring and reporting system (EMRS), including completed capacity development and pilot program on EMRS implementation. • Established and operational building energy database, including capacity development in the operation, maintenance and use of the database. • Completed evaluation of the implemented building energy audit system, and EMRS pilot programs, including proposed action plan for sustainability of these buildings EC&EE systems. 	GEFTF	295,455	550,000
3. EC&EE Improvements in Public Sector Buildings	Inv	Increased application of EC&EE technologies in public sector buildings and facilities	<ul style="list-style-type: none"> • Completed line-up of applicable building EC&EE technologies that can be feasibly implemented in selected public sector buildings; including completed designs and implementation plans of demonstration, which can include feasible and applicable EC&EE technologies/techniques and practices in public sector buildings². • Successfully installed and operational systems of the implemented demonstrations of EC&EE technology applications, including documentation of the results of regular monitoring and evaluation of operational and energy performance. 	GEFTF	1,000,000	1,980,000

² Potential demonstrations include building shell retrofit, application of EE appliances/equipment; effective and sustainable design, engineering, management and operation of building energy systems and services; application of pre-paid electric meters, and, application of demand side management schemes.

			<ul style="list-style-type: none"> Completed design and implementation plans for the replication and/or scale up of demonstrated EE technology application project. Fully evaluated portfolio of follow-up EC&EE technology application projects in other cities/towns in other states. 			
4. EC&EE Capacity Building in Public Sector Buildings	TA	Enhanced awareness and knowledge on the cost-effective application of EC&EE technologies in public sector buildings.	<ul style="list-style-type: none"> Completed capacity needs assessment in the areas of sustainable energy and EC&EE of each energy end-use sector, including that of the banking/finance sector. Completed designs of appropriate capacity development programs and associated training manuals for key stakeholder groups (e.g., energy consumers, service industry and banking/finance sectors). Completed studies for the banking/finance sector on the derisking of investments in low carbon technology application projects, and design of feasible financing schemes for financing such projects in the buildings sector Operational project website for the promotion and dissemination of knowledge within the country and to other PICs/SIDS on building energy efficiency, and successful design, financing and implementation of the applications of EC&EE technologies and techniques in public buildings. 		244,530	500,000
Sub-Total				GEFTF	1,614,985	3,180,000
Project Management Cost				GEFTF	161,499	320,000
Total Project Cost				GEFTF	1,776,484	3,500,000

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount US (\$)
National Government	Department of Resources and Development	Grant	2,450,000
		In-Kind	200,000
Local Government	State Governments (Chuuk, Kosrae, Pohnpei and Yap)	Grant	800,000
State Utilities	CPUC, KUA, PUC and YSPSC	Grant	TBD
Private Sector	TBD	Grant	TBD
GEF Agency	United Nations Development Programme (UNDP)	Grant	50,000
Total Co-financing			3,500,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS:

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total(c)=a+b
UNDP	GEFTF	Federated States of Micronesia	Climate Change	N.A.	1,776,484	168,766	1,945,250

E. PROJECT PREPARATION GRANT (PPG)³

Is Project Preparation Grant requested? Yes ☒ No ☐ If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/Regional/Global/	Programming of Funds	(in \$)		
				PPG (a)	Agency Fee ⁴ (b)	Total c = a + b
UNDP	GEFTF	Federated States of Micronesia	Climate Change	50,000	4,750	54,750
Total PPG Amount				50,000	4,750	54,750

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁵

Corporate Results	Replenishment Targets	Project Targets*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated(<i>direct & indirect</i>)	300.3 ktons CO ₂ reduced (<i>direct & consequential</i>)

*This is the potential from the buildings sector in FSM, which accounts for about 50% of the forecast average annual electricity consumption of the country during the project period (starting 2018) and during the average lifetime of 20 years of EE technology application installations.

PART II: PROJECT JUSTIFICATION

1. Project Description.

1.1. Global environmental problems, root causes and barriers that need to be addressed

The Federated States of Micronesia (FSM) is comprised of four semi-autonomous states (Chuuk, Kosrae, Pohnpei, and Yap) and includes 607 islands (74 of which are inhabited). As of 2014, the country has a population of 105,681 inhabitants. Each of the 4 states has its own executive and legislative bodies, and considerable autonomy to manage its domestic affairs. Each State has its own development strategy, while the national government provides an integrated perspective and vision as described in the National Development Plan of FSM.

³PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF up to \$1 mil; \$100k for PF up to \$3 mil; \$150k for PF up to \$6 mil; \$200k for PF up to \$10 mil; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

⁴ PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

⁵ Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

The country has few resources, and exports are heavily concentrated on its marine resources. Most of the commodities (e.g., 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 country's small land mass. Presently, electricity generation in the country is almost completely based on fossil fuels. The high cost of electricity contributes to the high average residential expenditure on energy per year as percentage of household income.

In 2011, the total electricity generation in FSM (all 4 state utilities) was 75 GWh.⁶ That year, the CO₂ emissions from power generation was about 64 ktons, which is roughly 46% of the total CO₂ emissions from the combustion of liquid petroleum fuels (i.e., diesel fuel oil). During the period 2002-2013, the average annual CO₂ emissions from liquid petroleum fuel usage was about 138.1 ktons⁷. Based on these data on CO₂ emissions from petroleum fuel combustion, the average annual power generation in FSM is about 80.8 GWh. On average, the distribution of electricity sales in FSM is as follows: residential (47%), commercial (32%), industrial (2%), and others (including government) at 19%. The single largest use of electricity is for air conditioning (especially in the government sector). This is followed by energy use for lighting. The typical electricity use distribution in the buildings sector in FSM is as follows:

Building Type	% Distribution of Electricity Usage			
	Cooling	Lighting	Appliances	Hot Water
Office	73	17	10	
School	64	31	5	
Hospital	47	45	8	
Hotel	61	7	2	29

In line with the aim of contributing to the global effort to mitigate climate change caused by the emission of GHGs from petroleum fuel use, the country intends to improve the utilization of energy to contribute in meeting the long-term energy (thermal and electrical) requirements of the country, in addition to utilizing available feasible renewable energy resources. Optimizing the utilization of petroleum fuels through the application of energy efficiency (EE) measures, will contribute to the GHG emission reduction efforts. However, there are several barriers/issues that must be overcome to enable FSM to realize widespread applications of energy conservation and energy efficiency (EC&EE) in the major energy end use sectors such as the buildings sector, particularly the public sector buildings. These barriers/issues include:

Policy/Regulatory and Institutional Barriers: There is a National Energy Policy (NEP), and each of the 4 states that make up the FSM (Chuuk, Kosrae, Pohnpei and Yap) also has its State Energy Action Plan, which in general is a compilation of the planned actions on energy, including electricity supply and distribution, as well as on EC&EE. The policy-related barriers that hinder the implementation of pertinent actions that would motivate interest in developing and sustaining the buildings sector include: (a) Inadequate review and public engagement of appropriate energy policies and strategies, inclusive of the supporting rules/guidance and legislations/regulations, for EC&EE in buildings; (b) General lack of information about the energy consumption and utilization performance of buildings; (c) Lack of building energy code and standards; and, (d) Weak institutional framework/arrangements that does not support the continuous promotion and implementation of EC&EE in the buildings sector, in general, and in public

⁶ Source: NREL, USDOE, Energy Transition Initiative, Energy Snapshot, Federated States of Micronesia.

⁷ World Bank: <http://data.worldbank.org/country/micronesia-fed-sts?view=chart>

sector buildings, in particular. The NEP target on EE improvement would not be realized and sustained unless these policy-related issues are addressed and eliminated (or at least reduced).

Technical Barriers: Typically, for a country like FSM, the technical capacity of the energy sector in the area of EC&EE is usually within the state power utilities. However, like in other PICs, this is not often the case in FSM. The utilities lack technical capacity in designing and implementing EC&EE projects both at the supply and demand side. A few engineering firms affiliated with US consulting firms in places like Guam are implementing EC&EE projects. The technical capacity that the country should be able to use to facilitate energy's important contribution to sustainable development (i.e., improved energy supply and efficient energy consumption and environmental quality improvement) is generally weak. In general, the energy end-users in the country, specifically the public sector buildings, lack the knowledge and capacity in designing, developing and implementing EC&EE technologies and techniques/practices applications.

Information and Awareness Barriers: There have been several information dissemination and awareness raising campaigns carried out by the GOFSM, mostly as part of donor-funded projects (e.g., EU-REP5 and North REP, SIDS DOCK) and by the state utilities on EC&EE. However, the impact in terms of the attitude of the general public and particularly the national and state government authorities have not significantly changed. Energy-integrated development planning (EIDP) is most likely unknown to them or some of them may have come across the concept but their level of knowledge and understanding of the application of the concepts involved is lacking. Also, in general, the local technical capacities on EC&EE project development and implementation are generally weak. There is also low level of knowledge of opportunities and obstacles to the application EC&EE technologies, which is further exacerbated by the limited information about successful applications of these in island communities.

Financial Barriers: Although some residents and private sector entities have financial resources to implement EC&EE measures in their households or companies, there are very limited initiatives on this. The widespread application of EC&EE techniques and practices among the general public is often hampered by their limited interest in financing their own EC&EE projects because of several reasons, among these are the lack of understanding on how such projects are designed and implemented. The banking and financial sector shy away from these initiatives, wary of venturing into risky investments.

The abovementioned barriers, if not properly and adequately addressed will continue to prevent the timely and complete achievement of the country's rural electrification target.

1.2. Baseline scenario and any associated baseline projects

The ongoing baseline energy projects on rural electrification and RE and EE promotion and application in the country include:

1. **Energy Sector Development Project** – This is a World Bank-funded project for increasing the available generation capacity and efficiency of electricity supply in the state power utilities, and to strengthen the planning and technical capacities of the FSM national government and the state power utilities in the energy sector. Among the 3 major components of this US\$ 14.4 million grant project is on energy efficiency, particularly in the use of electricity, e.g., EE measures at the demand side, and information, communication and education on EC&EE.
2. **Adapting to Climate Change and Sustainable Energy (ACSE)** – This is a small grants funding of about €775,000 for FSM from the European Union through aid agency GIZ. With the objective of enhancing FSM's energy security, among the interventions that will be implemented are those for promoting energy efficiency at the national, state and community levels.

3. EDF-11 Funds for FSM (National Indicative Programme for FSM) – Per the ACP-EU Partnership Agreement, a single program for FSM amounting to € 14.2 million will be implemented during the 11th EDF period (2014-2020). About € 12.0 million of this fund is for the energy sector, and among the specific objectives is improved overall EE of the energy sector.

With the ongoing baseline projects/activities that include components on EC&EE, the current rather low level of public awareness of the energy and economic benefits of conserving energy and using energy efficiency will continue as in the past. The use of energy in a rather inefficient manner would remain as the primary feature of energy utilization in the country in the next 5 to 10 years, and may even persist for a much longer period⁸. There will be a significant loss in opportunities for the country to reduce GHG emissions and air pollution while improving the living conditions of the citizenry if only the baseline projects/activities will be implemented. The realization of significant GHG emission reduction through the implementation of applicable and feasible energy efficiency measures and technologies in support of the socio-economic development of the country will not be realized if an alternative development path will not be taken and facilitated.

Based on the State Energy Action Plans, the efforts on improving energy efficiency are focused on both the supply and demand side, with emphasis on the former. For the latter, this is mainly on government buildings. Nonetheless, at the current rate of planning and implementation of EC&EE initiatives in the country, the current approach in improving awareness raising and information dissemination, the current low level of public awareness about cost-effective EC&EE technology applications, and the low level of efforts to conserve energy and use energy efficiently will continue as in the past. If this is not adequately addressed, the country may fall short of reaching its set target of 50% improvement in energy efficiency by 2020. According to the state utilities, the level of energy efficiency in 2015 range from 17% to 20% nationwide. This low level of energy efficiency may even persist for a much longer period if the current strategy (and lack of appropriate support policies) would remain as the primary feature of capacity building, awareness raising, and information/data generation and dissemination. The opportunities to achieve the 2020 EE target, and for reducing GHG emissions to achieve the country's commitments in its Nationally Determined Contributions (NDC)⁹ document will be lost if only the baseline projects/activities will be implemented. The realization of significant GHG emission reduction through the implementation of applicable and feasible EC&EE technologies, techniques, measures and practices in support of sustainable energy development of the country will not be realized if an alternative development path that will facilitate the achievement of the country's EE target will not be taken and facilitated.

Building on the ongoing and planned RE/EE projects in the country will involve incorporation of relevant enhancements or modifications to the abovementioned baseline projects to enhance the realization of not only national benefits but also global environmental benefits. These could be on: (1) aspects that are covered by the baseline project; (2) modifications (e.g., additional features) that can be done; and, (3) follow-up interventions to enhance the realization of the EE target.

1.3. Proposed alternative scenario

The improvement of the efficiency of utilizing energy in the major end use sectors of FSM to sustain economic development is the objective of this proposed project. To achieve this, the identified barriers to the effective and extensive application of energy efficiency measures and technologies that are also in line

⁸ Most of the donor-funded projects in the PICs are on RE. The recent projects focus on EE standards and labels. There is only one ongoing initiative in the region on EE, and that's the UNEP-led EES&L regional project. There was no follow-up so far to the regional EE project (I&II) funded by the ADB. In FSM, there's no ongoing EE project, except for the limited building energy audits done by the utilities. Implementation of the energy audit findings is rarely done.

⁹ FSM submitted its INDC to the UNFCCC on 22 April 2016. The country ratified the Paris Agreement on 21 September 2016. Its INDC is now referred to as its NDC.

with low carbon development must be removed. In this regard, a barrier removal approach will be applied. With the assistance of the GEF will facilitate the application of appropriate technological, institutional and policy-oriented options that would make the socio-economic development of FSM a sustainable one. Apart from making use of available indigenous renewable energy resources, the rational (i.e., efficient, effective and wise) utilization of energy resources, will be promoted and facilitated to ensure socio-economic growth that contributes to increased climatic resilience and reduced emissions of greenhouse gases (GHGs). The baseline activities of the country are expected to enable the achievement of only a portion of the target 50% improvement in energy efficiency by 2020, at around 30%. Incremental activities must be carried out to reach the target. The combination of the baseline and incremental activities will bring about the realization of the alternative scenario which features the realization of the 2020 energy efficiency target. The proposed project will bring about this alternative scenario.

The focus is on the optimal and efficient utilization of energy in support of socio-economic development, and will cover the following;

1. Facilitation of the enforcement of the supporting policy/regulatory frameworks and institutional mechanisms for EC&EE initiatives in the public sector buildings;
2. Development and implementation of improved energy management and monitoring of public sector buildings
3. Demonstration of EC&EE technologies applications in public sector buildings and facilities
4. Promotion and capacity development on the cost-effective application of EC&EE technologies in public sector buildings.

Component 1: EC&EE Policies & Regulations Improvements in Public Sector Buildings

This project component will address the absence of EC&EE policies, and weak enforcement of the limited energy policies and regulations, to promote and support the application of cost-effective EC&EE technologies in the country's end-use sectors, in general, and in the public sector buildings, in particular. The expected outcome of the major outputs that will be delivered by the activities that will be carried out under this component is the enforcement of policies and rules and regulations on the energy efficient and energy conserving design, retrofit, operation and maintenance of public sector buildings. The required outputs include: (a) Completed comprehensive policy research, impact analyses and assessment of applicable policies and regulations, institutional frameworks to facilitate cost-effective applications of EC&EE technologies, techniques and practices in the buildings sector; (b) Approved and enforced policies, policy instruments, rules & regulations and standards on, and institutional arrangements for the promotion and application of EC&EE technologies in the buildings sector; (c) Approved and enforced national building energy code and standards that incorporates specifications for EE features and EC&EE technology applications in the design, construction, retrofit and operation of new and existing buildings; and, (d) Completed evaluation of enforced EC&EE policies, regulations, standards and adopted institutional framework; and approved follow-up plan for the enhancement of EC&EE policies and programs in the buildings sector.

Component 2: Energy Performance Monitoring and Evaluation of Public Sector Buildings

Among the major issues in the rather low energy utilization efficiency in the buildings sector, in general, and in the public sector buildings, in particular, is the dearth of data/information about the energy consumption and energy utilization performance of buildings. The enhanced management and monitoring of the energy performance of public sector buildings is the expected outcome from the collective outputs that will be delivered by the various project activities that will be implemented under this project component. These outputs include: (a) Established and operational building energy audit system, including completed capacity development in the planning and conduct of building energy audits, and completed

energy audits of selected public sector buildings; (b) Established and operational buildings energy (supply and consumption) monitoring and reporting system (EMRS), including completed capacity development and pilot program on EMRS implementation¹⁰; (c) Established and operational national building energy database, including capacity development in the operation, maintenance and use of the database; and, (d) Completed evaluation of the implemented building energy audit system, and EMRS pilot programs, including proposed action plan for sustainability of these buildings EC&EE systems¹¹.

Component 3: EC&EE Improvements in Public Sector Buildings

This component of the project will address the technical issues that are currently hindering investments on, as well as the practice of EC&EE. From the technical assistance and investment related activities that will be carried out under this component the expected outcome is increased application of EC&EE technologies in public sector buildings and facilities. The major outputs that are expected to bring about this outcome are the following: (a) Completed line-up of applicable building EC&EE technologies that can be feasibly implemented in selected public sector buildings; including completed designs and implementation plans of demonstration, which can include feasible and applicable EC&EE technologies/techniques and practices in public sector buildings; (b) Successfully installed and operational systems of the implemented demonstrations of EC&EE technology applications, including documentation of the results of regular monitoring and evaluation of operational and energy performance; (c) Completed design and implementation plans for the replication and/or scale up of demonstrated EE technology application projects; and, (d) Approved portfolio of follow-up EC&EE technology application projects in other cities/towns in other states. The results and impacts of the implemented EC&EE technology application demos in selected public sector buildings, will serve as main bases for the planned follow-up projects that can make use of currently available financing sources such as the private sector¹², and the Green Climate Fund (GCF).

Component 4: EC&EE Capacity Building in Public Sector Buildings

This project component is intended to address the barriers related to the low level of technical capacity and awareness within the buildings sector in the application and practice of EC&EE technologies and techniques. The achievement of enhanced awareness and knowledge on the cost-effective application of EC&EE technologies in public sector buildings is the expected outcome from the outputs that will be delivered under this project component. The expected major outputs are the following: (a) Completed capacity needs assessment in the areas of sustainable energy and EC&EE of each energy end-use sector, including that of the banking/finance sector, as well as the results of the evaluation of impacts of previous

¹⁰ The EMRS pilot program will involve the energy monitoring and reporting of selected pilot public buildings. The buildings managers/administrators will measure/quantify and analyze energy supply and consumption of their respective buildings, identify energy saving opportunities, come up with their suggested EC&EE measures, implement the feasible measures (starting with no cost/low cost measures), and report on the results/impacts (in terms of energy and energy cost savings). Buildings that will part of the energy audit program under this Component are also included in the EMRS pilot program.

¹¹ Facilitating the sustainability of the programs, particularly in the public sector would require their continuous financing. Public building managers/administrators can achieve this by optimally sequencing the programming of the implementation of EC&EE measures (i.e., no cost/low cost, then medium cost, then capital intensive), and consistently allocating budgets for EC&EE measures (not only for repair & maintenance). In addition to these, outsourcing the funding of EC&EE initiatives through public-private partnership and use of energy service companies (ESCOs) are modalities that can be considered.

¹² The implementation of the activities under Component 3 will involve the active participation of private sector entities, i.e., the service sector (e.g., engineering firms and building materials suppliers) in the design, planning and engineering of the demonstrations in Pohnpei. Such entities will also be involved in the installation, operation and monitoring and evaluation of the installed systems in each demo buildings. Private commercial banks can also be the source of financing for some of the replication/scale-up of the demos. These private sector entities will be more involved in the development of the design, financing and implementation plans for the replication and/or scale up of demonstrated EE technology application projects that will be implemented in other cities/towns in other states. Recognizing the fact that the private sector in FSM is currently not active and generally not “in the know” about EC&EE matters, the project will be designed to also address such issue (Component 4).

and ongoing capacity development activities on these subjects; (b) Completed designs of appropriate capacity development programs and associated training manuals for key stakeholder groups such as the energy consumers in the major sectors of the national economy, as well as for those in the service industry and banking/finance sector¹³; (c) Specifically for the banking/finance sector entities, conduct of studies on the derisking of investments in low carbon technology application projects, and design of feasible financing schemes for financing such projects in the buildings sector; (d) Conducted and evaluated (impacts and recommendations) capacity development programs for the key stakeholder groups; (e) Published and disseminated information about the results and outputs of the capacity development activities, as well as the results and outputs of the other major project activities; and, (e) Operational project website for the promotion and dissemination of knowledge within the country and to other PICs/SIDS on building energy efficiency, in general, and successful design, financing and implementation of the applications of EC&EE technologies and techniques in public buildings, in particular.

1.4. Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

The proposed project will build on the ongoing and planned projects and activities of the GOFSM that are intended to achieve the target 50% improvement in energy efficiency by 2020. These baseline projects/programs are the rather limited efforts of the country to achieve its set EE improvement target. With just these, the full potential for energy and energy cost savings, clean energy and low carbon technology applications, and associated local benefits (e.g., increased income generation activities, improved services, etc.), and GHG emission reductions from the major energy end use sectors of the country will not be realized.

This proposed project will also bring about local benefits to the FSM. These benefits include: (1) improvement in energy supply security; (2) improvement of the air quality in existing diesel-based power generation facilities; (3) reduction of petroleum fuel imports and utilization of the cost savings from this to other areas that can contribute more to the national economy; and, (4) indirect social co-benefits in terms of employment opportunities for both men and women with professional and technical skills in the implementation of EC&EE initiatives in the energy end-use sectors of the country.

The barrier removal approach that will be applied in this proposed project for achieving the project objective of improved application of energy conserving and energy efficient techniques and practices in the design, retrofit, operation and maintenance of public sector buildings in FSM. In so doing, also contribute to the achievement of the set %EE target). The barrier removal activities practically make up the incremental activities that the project will carry out particularly those that the GOFSM will not be, or presently does not have the capacity for, addressing these barriers. Several incremental support activities will be carried out to facilitate the demonstration of the application of energy management systems (e.g., energy auditing, energy monitoring and reporting) in buildings, starting with the public sector buildings. Without the incremental barrier removal and enabling activities the achievement of the anticipated alternative scenario in the country's buildings sector, particularly in public sector buildings will not be realized. The removal of the

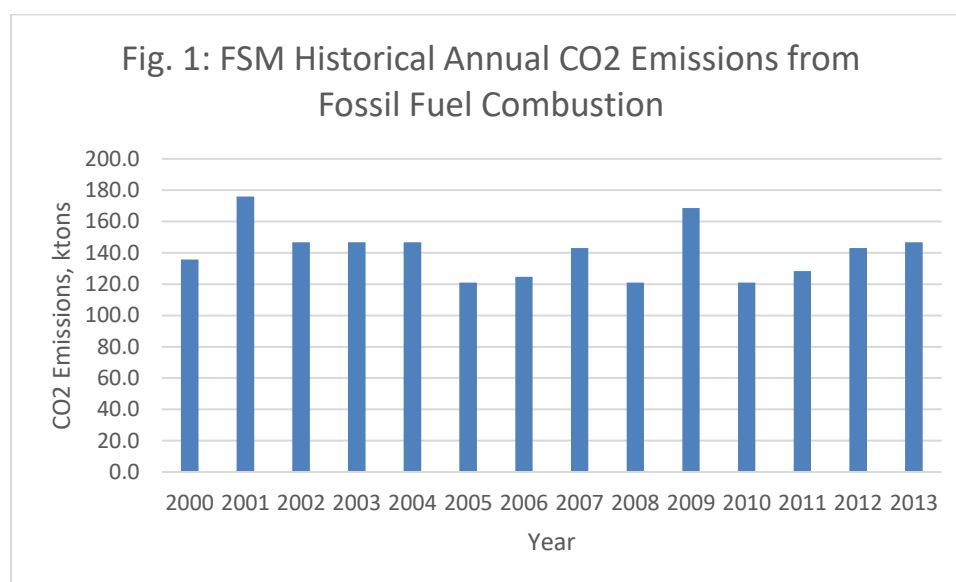
¹³ The capacity development programs will be based on the findings and recommendations from the capacity needs assessment. However, from initial discussions with the project proponents, the specific programs that will be developed will not only for building capacity but also for encouraging the target stakeholder group to venture and be actively involved in the EC&EE business in FSM, starting with the buildings sector. For the service industry (e.g., engineering/construction firms and building materials suppliers) the capacity development program will focus on the energy conserving design and construction, and energy efficient operation and maintenance of buildings and building services, and will also for encouraging the service industry to invest in EC&EE projects in the buildings sector (including public buildings) and in the residential sector. They can also be trained to venture to performance contracting like an energy service company (ESCO) that can also finance building EC&EE projects. For the banking/finance sector, aside for purposes of promoting and convincing them to invest in EC&EE projects in households and in the buildings sector, the capacity development program will focus on financing models for EC&EE projects, feasibility analyses, and EC&EE project financing scheme design, implementation and management.

barriers is essential in the realization of the potential socio-economic development co-benefits that result from the operation of energy efficient public sector buildings.

1.5. Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

The global environmental benefits (GEBs) from the proposed GEF project would mainly come from GHG emission reductions from the improvement of the specific energy consumption of each energy end use sectors in FSM through improved energy utilization efficiency. The GHG emissions reductions would come from: (1) Direct emission reductions from completed EC&EE technology application demonstrations and replications; and, (2) Consequential emission reductions from follow-up EC&EE technology application projects in the country as influenced by this proposed GEF project.

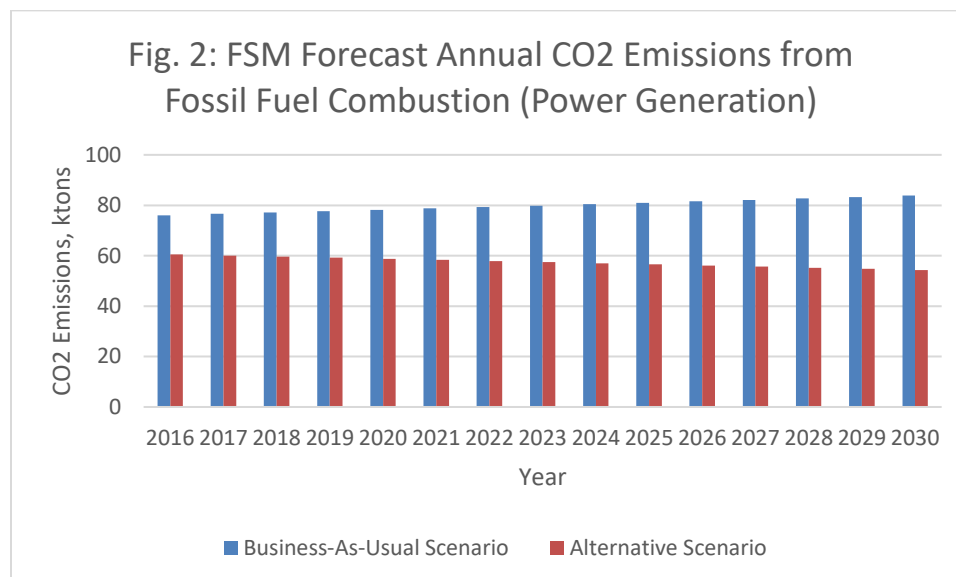
The historical annual GHG emissions from the combustion of fossil fuels (i.e., petroleum products) is shown in Fig. 1 for the period 2000-2013¹⁴. The average annual GHG emissions was 140.7 ktons CO₂. On average, about 46% of this was from power generation, the rest was mainly for transport and a small percentage was for water heating and cooking in residential households and commercial establishments.



Based on trend analysis, considering a business-as-usual scenario, the forecast annual national electricity consumption (mainly from diesel-based power generation units) is 102 MWh during the period 2017-2030, and the associated GHG emission reduction is about 80.2 tons CO₂/year (See Fig. 2). With the implementation of EC&EE measures in the electricity end-use sectors of the country would translate to a reduction in annual power generation of about 25% of the business-as-usual national electricity demand by 2020. Assuming this proposed 3-year UNDP-GEF project will commence in 2018, based on the forecast national electricity generation during the period 2018-2020 in the baseline and alternative scenarios, the potential cumulative tons CO₂ emission reduction from the implementation of EC&EE measures in all electricity consuming sectors of the country, is about 55.4 ktons. The buildings sector accounts for roughly about half of the total electricity consumption, while the public buildings collectively consume 19% of the annual electricity consumption. Hence, about 10.5 ktons can be saved through the implementation of EC&EE initiatives (directly through, and as influenced by this proposed GEF project) from public buildings. Considering the 10-year influence period after the end of the proposed GEF project, an overall potential of about 80 ktons of CO₂ emissions can be realized from the public buildings. This project is

¹⁴ <http://data.worldbank.org/country/micronesia-fed-sts?view=chart>

expected to influence also the entire buildings sector of the country and is estimated to generate GHG emission reductions during the entire average lifetime (20 years) of installed EE technology systems. In that regard, the estimated overall direct and consequential GHG emission reductions would be about 300.3 ktons. This is possible if the buildings sector of the country will continuously implement EC&EE initiatives to reduce electricity consumption.



1.6. Innovativeness, sustainability and potential for scaling up.

Innovation: Except for previous building energy audits that have been conducted in the government buildings in the 4 states, as part of their State Energy Action Plans, the proposed project will involve the implementation of the identified and recommended energy saving opportunities (ESOs) from the audits. As such, this proposed project is innovative in the context of the FSM because there are no similar projects that have been done in the past, existing or planned. Past projects that involved the conduct of building energy audits just produce the energy audit reports and there are no follow-up implementations of the recommended ESOs. Apart from this, the proposed project will come up with a definitive energy audit system, as well as a system of regularly monitoring, reporting and evaluating the energy consumption of buildings, starting with the public sector buildings. In addition to the envisioned building energy audit system, there will also be capacity development in the planning and conduct of proper building energy audits, and the conduct of (preliminary and detailed) energy audits of selected public sector buildings. Results from the energy audits will be used in the design of the EC&EE technology application demo and replication projects in public sector buildings. Moreover, this project is not only to contribute to the achievement of the country's EE target but also indirectly contributes to the realization of the country's %RE electricity target.

Sustainability: The project includes the establishment of the required enabling conditions¹⁵ that will make possible supportive actions for the promotion and application of EC&EE technologies in the buildings sector, particularly the public sector buildings. Such conditions will facilitate the sustainability of whatever

¹⁵According to the state utilities, these include: (1) an approved and enforced national building energy code and standards that incorporates specifications for EE features and EC&EE technology applications in the design, construction, retrofit and operation of new and existing buildings; and, (2) supportive policies and incentives for implementing EC&EE projects in buildings.

policy instruments, regulations, and institutional mechanisms to make possible increased investments in EC&EE technologies and contribute to the achievement of the country's EE target. Since the project is linked and is complementing and supplementing the existing national energy policy and state energy action plans, the sustainability of project outputs will be sustained. The state energy plans are implemented by the state governments and state utilities. The plans are reviewed and adjusted every year. Project outputs like the building energy code will be institutionalized and used as basis for the EC&EE projects of the states. Outputs like the established energy monitoring and reporting system (EMRS) and the building energy audit system will be operationalized during and beyond project end.

Potential for Scaling-up: The rather energy inefficient operation of buildings in FSM, particularly in the public sector buildings, presents the best opportunity to scale up and replicate the EC&EE technologies and techniques that will be demonstrated under this project. These demonstrations are intended to be replicated and/or scaled-up to achieve the envisioned magnitude of GEBs from the proposed GEF project. The successful demonstrations that will be implemented in selected public sector buildings can be replicated as is, or at a scaled-up configuration in the other built-up areas in each state. There is significant potential for energy savings in public buildings, and whatever is successfully demonstrated in a national or state government building can relatively be easy to replicate or scale-up using national/state government funds. Under Component 3 of the project, an approved portfolio of follow-up EC&EE projects in the buildings sector will be produced, and this would most likely include those that are scale-up and replication of the demo projects. Best practices and lessons learned that will come out from the project implementation will also be shared with other PICs and SIDS with similar circumstances of the country, thereby facilitating the scaling up of the project interventions in other PICs.

2. Stakeholders: Will project design include the participation of relevant stakeholders from civil society (Yes ☒ /No ☐) and indigenous people? (Yes ☐ /No ☒) If yes, identify key stakeholders and briefly describe how they will be engaged in project design/preparation:

The main stakeholder of this project is the Division of Energy–Department of Resources and Development. The tentative list of project stakeholders is shown below. This will be finalized during the project design and preparation period.

Stakeholder	Roles and Responsibilities in Project Preparation
Department of Resources and Development (DRD)	Responsible for communication and coordination with the OEEM (GEF OFP) and UNDP on the PIF development, liaison with public sector buildings, in-charge of management of project development
Department of Transportation, Communication and Infrastructure (DTCI)	Provision of data inputs on plans and programs of the country concerning the energy provision in the public sector buildings, as well as energy-related projects in government (national and state) buildings.
Office of Environment & Emergency Management (OEEM)	Provision of assistance in the identification and analysis of impacts on the environment of all energy-related projects. Provision of advice on linkages of the project with requirements on multilateral environmental agreements, as well as guidance on GEF requirements to comply with in the PIF development.
Department of Finance and Administration	Provision of advice on the energy investment plan of the country, including assistance in coordination of the project with other related donor-funded national and state energy-related projects.
Other GOFSM Departments (e.g., Health, Education)	Provision of advice (including data provision) on the identification and design of EC&EE technology demonstrations in public sector buildings such as hospital and school buildings.
State Power Utilities (CPUC, KUA, PUC and YSPSC)	Provision of advice and assistance in the identification and design of demonstrations for building EC&EE technology applications.

Stakeholder	Roles and Responsibilities in Project Preparation
Private Sector Entities (commercial buildings, engineering firms)	Provision of assistance in the identification and analysis of barriers to the application of EC&EE technologies (RE/EE) in buildings, particularly public sector buildings.

3. Gender Equality and Women's Empowerment: Are issues on gender equality and women's empowerment taken into account? (Yes ☒ /No ☐). If yes, briefly describe how these will be mainstreamed into project preparation (e.g., gender analysis), taken into account the differences, needs, roles and priorities of men and women.

As in other UNDP-GEF projects, gender equality is one of the important aspects of this proposed project, particularly in the context of capacity development, and professional enhancement in EC&EE technologies applications. The detailed design of this proposed project, starting with the logical framework analysis (LFA) will cover all relevant issues that pose as barriers to improved energy utilization efficiency and energy conservation in the public sector buildings in FSM. Among the issues that will be covered will be those that relate to improvement of gender equity and women's role, and will cover potential barriers (if any) posed by gender equity issues, and barriers to: (1) Supporting gender equity and women empowerment in the promotion and implementation of EC&EE technology designs and applications; (2) Enhancing opportunities to enhance the role and influence of women in the deployment of EC&EE technologies and other related climate change mitigation (CCM) options, and, (3) The development of gender-sensitive policies in the buildings sector in FSM. The important contributions of professional and technically-capable women in the management and implementation of such measures will be fully recognized and utilized. The project design and preparation will also consider the potentials for the involvement of women working in both management and technical departments of the relevant national and state agencies/institutions who can play important roles in the design, development and implementation of this proposed CCM project. Furthermore, the design and preparation of this project will consider the potential contributions of related projects of civic and/or non-government organizations in the country, as well as the potential impacts and benefits of the proposed project to children and indigenous people.

4. Risk: Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable):

The risks that might prevent the project objectives from being achieved are listed below. For each risk, recommended mitigation actions are provided for preventing the risk from happening, and for alleviating the impacts, in case it happens:

Risk	Level of Risk	Mitigation Actions
1. Approval and enforcement of recommended policies/regulations are delayed agencies.	Medium	To prevent this, the project includes advocacy campaigns to get adequate support from the GOFSM authorities on the adoption of the recommended policies and regulations. UNDP will assist if necessary. In case this happens, a consensus will be taken among the project stakeholders about the action steps to be taken to expedite the approval and enforcement of the recommended policies and regulations. The designated implementing partner (DE/DRD) will facilitate this through project steering committee (PSC) meetings, in coordination with the relevant GOFSM regulatory authorities
2. Established building energy management	Medium	To prevent this, promotional/advocacy work and provision of technical assistance in regards the building energy monitoring and reporting system,

systems (including building energy code) are not supported by public sector buildings.		and building energy audit system will be carried out with the DE/DRD, and possibly with the DTCL. In case public sector buildings become remiss in their submission of periodic energy consumption reports) during the project implementation, follow-up discussions between DE/DRD, relevant state government agencies and the building administrators will be carried out to resolve the issues.
3. Not fully implemented project activities due to lack of local capacity.	Medium	To prevent this, adequate project design technical support and capacity development will be provided to DE/DRD and the relevant partner agencies in each state to support the efficient design and implementation of the project components and sustainable systems are established for the operation and maintenance period. Additional capacity development activities for DE/DRD and others will be provided during the project design. In case the local capacity remains inadequate, with the agreement of the DE/DRD, The UNDP Pacific Office (Fiji) will manage and expedite the procurement process for external personnel that will work on the project activities. Potential modification of activities to allow for expeditious implementation will be done.
4. Selected energy audited public sector buildings are not able to implement recommended EC&EE projects (<i>mainly due to lack of confidence on economic viability</i>).	Medium	To prevent this, proper vetting (based on agreed criteria) of the recommended EC&EE projects in selected public sector buildings will be done. The design of such projects shall be properly done to facilitate financially sustainable schemes to be showcased, aside from the envisioned socio-economic benefits. In case during design of selected demos, indications that the selection may not be economically viable (e.g., equipment price increase, initial design assumptions no longer apply, etc.), alternative schemes will be recommended for consideration, and appropriate adjustments will be done considering the factors that made the initial selections no longer economically viable.
5. Committed co-financing for specific activities of the project is not available at the scheduled time.	Low	To avert this, the GOFSM assurance of co-funding shall be confirmed and secured prior to project launching. The project team will closely monitor and ensure the timely availability of co-financing from project partners and co-financers during project implementation. Possible reallocation of budget will be done in case this happens. This is to support the implementation of activities affected by the delays in the availability of co-financing. Potential modifications of activities will be done to allow delivery of alternative outputs that are still contributing to the achievement of the relevant outcomes, in the case of committed co-financing is not forthcoming. Follow-up meetings with co-financer will be conducted by the DE/DRD, or alternatively finding and negotiating with other potential co-financers will be done.
6. Reduced support to the project from national and/or state governments.	Low	Facilitating the continuous support of both national and state government agencies (DE/DRD, and state utilities) will be assessed during PSC meetings, and courses of actions will be carried out to ensure national and state government ownership and support of the project. UNDP executive management intervention may be required, if necessary. PSC meetings and special meetings with the DE/DRD and OEEM will be conducted in case this is happening. These meetings will be to discuss courses of actions to take to sustain the national and state governments' support to the project, and carry out such plans accordingly.
7. Reduced interest to carry out EC&EE in the buildings sector due to relatively low petroleum fuel prices.	Low	The project's awareness raising interventions are expected to sustain the overall interest of the country to achieve energy efficiency in the energy end-use sectors even when the petroleum fuel prices are relatively low. In case petroleum fuel prices go down, the project will emphasize the need to take advantage of the energy, environment and economic benefits of EC&EE, and the country's obligation towards the realization of its climate change

		mitigation targets in its NDC to sustain the interest on the energy conserving and efficient operation of buildings.
Overall Level of Risk		Medium

Since most of the EC&EE technology applications in buildings are indoors, installations that will be involved in most of the demonstrations will not be directly affected by extreme climate-related events. In that regard, such risk will be relatively low. The design and construction/installation of EE features in the exterior of buildings (e.g., building envelope) will comply with the technical and structural specifications that major bilateral and multi-lateral donors require for the infrastructure projects that they are funding in the Pacific region to withstand gale force winds, which often happen during typhoons in the Northern Pacific.

5. Coordination: *Outline the coordination with other relevant GEF-financed and other initiatives:*

As previously mentioned, this proposed GEF project builds on the ongoing and planned energy (RE and EE) initiatives in FSM. A clear understanding of these initiatives of the national and state governments is essential to the design and development of this proposed GEF project. To make use of the potential synergies with the ongoing and planned initiatives of the national and state governments, the funding entities and other project partners, adequate coordination work will be carried out. The coordination work is also to achieve complementarities and building on best practices and lessons learned; and for potential sharing of project resources.

- WB Energy Sector Development Project:
 - *Lessons learned from interventions carried out to improve efficiency of electricity supply in the state power utilities*
 - *Potential synergy in, or provision of supplementary assistance, in the strengthening of the planning and technical capacities of the FSM national government and the state power utilities in the energy sector, and in energy efficiency in the use of electricity, with focus on buildings.*
- EU Adapting to Climate Change and Sustainable Energy (ACSE):
 - *Lessons learned from the implementation of interventions on promoting energy efficiency at the national and state levels.*
- EDF-11 Funds for FSM:
 - *Potential synergy in the implementation of activities to improve the overall EE of the energy sector.*
- State Utilities (CPUC, KUA, PUC and YSPSC) State Energy Action Plans
 - *Potential synergy in or provision of supplementary assistance, in the implementation of action plans for improving energy efficiency in government buildings in each state.*

Establishing links and coordination with other implementers of buildings EC&EE initiatives (e.g., commercial buildings) and with other building EC&EE networks will help in identifying the relevant activities that will build on their respective achievements. One of such network is the SE4All's Building Efficiency Accelerator (BEA). The BEA can be one of the many building energy efficiency programs that the proposed GEF project can partner with. Since the proposed project will introduce an energy monitoring and reporting system, it would be worthwhile learning also from the programs like the BEA that involves the private sector in EC&EE efforts in buildings. Moreover, since most of the demonstrations that will be implemented under the project will be in the state capital cities, dialogue meetings with the city government authorities will be organized and conducted during the PPG stage to discuss how their respective cities can learn from an international multi-stakeholder partnership and network like the BEA that is devoted to helping cities and sub-national governments speed up the process of adoption of best-practice policies and implementation of projects on energy efficiency in buildings. The proposed project will facilitate private sector involvement in the EC&EE efforts in the country, starting with public buildings. The project

proponents can learn from BEA how to effectively make use of the best practices in collaborative efforts between the private and public sectors both locally and globally in overcoming the barriers that have slowed progress on efficiency in the past. The BEA process of engagement in a city would be helpful for example in the assessment and prioritization of locally-appropriate policies and actions; monitoring EC&EE initiatives and documenting these, and sharing the information on these including lessons learned.

The UNDP Pacific Office (Fiji), and assisted by the UNDP-GEF EITT in Bangkok, Thailand will be fully involved in the project development through its participation in the various stakeholder and co-financing consultation meetings and technical workshops during project development.

6. Consistency with National Priorities. *Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (Yes ☒ / No ☐). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.*

The proposed project is for facilitating the improved application of energy conserving and energy efficient techniques and practices in the design, retrofit, operation and maintenance of public sector buildings in FSM. It is envisioned to contribute to the achievement of the country's EE target by 2020. In that regard, it is consistent with broad energy objectives and plans that are embodied in the National Energy Policy and the State Energy Action Plans. The national level energy actions focus on energy efficiency in public facilities (e.g., government buildings), energy standards for buildings, and energy awareness campaigns. The state actions are much more specific to RE and EE projects. Since the global environmental impact of the project is the reduction of GHG emissions, this project is also in line with the achievement of the commitments set in the country's Nationally Determined Contributions (NDCs), i.e., 28% reduction of GHG emissions (2000) by 2025.

7. Knowledge Management: *Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.*

The proposed GEF project will involve the implementation of capacity development activities, and the production of knowledge products. The knowledge management system that will be employed in the project will consist of the design, organization and conduct of training courses for pertinent personnel in the national and state governments, and in the country's buildings sector, particularly those in the public sector buildings that will be involved in the project activities. As previously mentioned, coordination with the implementers of ongoing energy projects will be carried out to determine potential synergies in the knowledge management activities, particularly in the approach and methodologies that will be applied. For the project's knowledge management work, a team comprised of competent local and international experts will be formed, and this team will work on information, communication and education activities that are aimed at enhancing the capacity of the buildings sector in the design, implementation and operation EE systems as applied in buildings. A project website will be developed and utilized as platform for information sharing for the promotion and dissemination of knowledge on building EC&EE technologies within and outside of the FSM (including other PICs and SIDS). Part of the project activities will be the establishment and operationalization of an energy monitoring and reporting system, and a national building energy database to be housed in the DE/DRD. This aspect of knowledge management, which involves the drawing on of information from several buildings (starting with the public sector buildings), will be implemented to establish the actual energy situation in the country's buildings sector. The information sharing platform that will be established and operationalized under the project will enable the gathering and sharing of data/information on lessons learned and best practices in the application of EC&EE technologies, techniques and practices in buildings, particularly in small island settings, can be obtained from other PICs and SIDS, and applied to specific situations and localities in the country. The results of the project activities


will also be disseminated to other PICs and SIDS through the information sharing platform within the project website.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT¹⁶ OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

NAME	POSITION	MINISTRY	DATE
Andrew Yatilman	Director/GEF Operational Focal Point	Office of Environment & Emergency Management	24 April 2017

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies¹⁷ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.					
Agency Coordinator, Agency name	Signature	Date	Project Contact Person	Telephone	Email
Adriana Dinu UNDP/GEF Executive Coordinator		August 11, 2017	Manuel L. Soriano Sr. Tech. Advisor Energy, Infrastructure, Transport & Technology	+66-2-304- 9100 Ext 2720	manuel.soriano@undp.org

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (Applicable Only to newly accredited GEF Project Agencies): N.A.

¹⁶ For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

¹⁷ GEF policies encompass all managed trust funds, namely: GEFTE, LDCF, and SCCF