PROJECT INFORMATION FORM (PIF)

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	**Barrier Removal for Achieving the National Energy Road Map Targets of Vanuatu (BRANTV)**		
Country(ies):	Vanuatu	GEF Project ID:	9574
GEF Agency(ies):	UNDP	GEF Agency Project ID:	PIMS 5926
Other Executing Partner(s):	Department of Energy - Ministry of Climate Change & Natural Disaster (DOE-MCCND)	Submission Date: Resubmission Date:	July 21, 2016 Aug 9, 2016
GEF Focal Area(s):	Climate Change	Project Duration (Mos)	48
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of Parent Program:	N/A	Agency Fee (US$)	250,774

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	2,639,726	16,100,000
Total Project Cost	GEFTF	**2,639,726**	**16,100,000**

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: Enabling the achievement of the energy access, sustainable energy, and green growth targets of Vanuatu

Project Component	**Financing Type**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**GEF Project Financing US$**	**Co-Financing US$**
1. Capacity Enhancement on Sustainable Energy and Low Carbon Development	TA	Improved capacity on sustainable energy, energy access and low carbon development in the energy, public and residential sectors.	• Completed capacity needs assessment in the areas of sustainable energy, energy access and green growth • Completed assessment of impacts of previous and ongoing capacity development activities on sustainable energy and low carbon development • Completed design and implementation of suitable capacity development programs for key stakeholder groups[1] • Completed capacity building for the existing banks on financing low carbon development projects • Comprehensive evaluation report on implemented capacity building programs, as well as published and disseminated	GEFTF	325,000	900,000

[1] Includes those that were also identified in the National Energy Road Map (NERM), Nationally Appropriate Mitigation Actions (NAMA), Renewables Readiness Assessment (RRA) and the Nationally Determined Contributions (NDC) such as: (a) Design, engineering, operation and maintenance of RE-based energy systems (power and non-power applications); (b) Design, implementation and evaluation of energy-related green growth (low carbon) actions in the energy and energy end-use sectors; (c) Integrated energy planning; (d) low carbon town and village/community development; and, (e) Development and management of businesses on the productive and social uses of RE-based energy community projects.

			information about the results and outputs of the capacity development activities, as well as the results and outputs of the other major project activities. • Established and operational information exchange network for the promotion and dissemination of knowledge on sustainable energy and low carbon development • Established and operationalized energy (petroleum and electricity) supply and consumption monitoring and reporting and database system.			
2. Improvement of Energy Policy Formulation and Implementation	TA	Improved policy and regulatory regimes in the application of sustainable energy, energy access, and low carbon development in the energy, public and residential sectors	• Completed policy research, impact (social, economic and environmental) analyses and assessment on sustainable energy and low carbon development (including from other SIDs) policies and regulations, in line with the Vanuatu NERM, NAMA and NDC. • Recommended standards, policies and implementing rules and regulations (IRRs) on the promotion and application of sustainable energy and low carbon technologies, and financing schemes for RE-based energy systems (power and non-power) based on completed policy researches and results of implemented low sustainable energy and carbon technology application demonstrations • Formulated and enforced policies that are in line with the NERM on the energy provision, sustainable energy and low carbon development • Published and disseminated guides and reference documents for integrated energy planning and low carbon development in the context of Vanuatu • Completed piloting of selected sustainable low carbon standards, policies, and IRRs • Approved follow-up plan for the enhancement of sustainable energy and low carbon development plans and policies.	GEFTF	150,000	450,000
3. Institutional Framework Enhancement for Sustainable Energy and Low Carbon Development		Established institutional framework enables the effective enforcement of policies and regulations, and implementation of programs and projects, on the application of sustainable energy and low	• Completed assessment of current institutional arrangements for implementation of rural electrification projects in line with the NERM, NAMA and NDC • Formulated and recommended institutional framework that supports the implementation of low carbon development policies, and IRRs • Adopted and enforced suitable institutional mechanisms that integrate low carbon development with the socio-economic, climate change and disaster management objectives of the country		100,000	300,000

		carbon technologies	• Performance evaluation report on the adopted institutional framework and mechanisms; and finalized institutional framework and mechanisms.			
4. Sustainable Energy and Low Carbon Initiatives Financing	TA	Increased availability of, and access to, financing for sustainable energy, energy access and low carbon (RE and EE) initiatives in the energy supply and demand sectors	• Report on the applicable financing schemes for sustainable energy and low carbon technology (power and non-power) projects in the context of Vanuatu • Completed design and development of feasible financing models and schemes to facilitate financing of sustainable energy and low carbon technology projects both in on-grid and off-grid areas[2] • Completed technical assistance services to financing scheme applicants	GEFTF	175,000	600,000
	Inv	Increased financing and investments from private sector on sustainable energy and low carbon projects in the energy supply and demand sectors.	• Established and operational financing scheme for low carbon technology (power and non-power applications) projects • Completed sustainable EE and RE technologies application projects financed either through the established financing scheme; or by private sector investments • Completed evaluation of suggested enhanced financing policies for supporting initiatives on low carbon development.	GEFTF	700,000	1,500,000
5. Sustainable Energy and Low Carbon (RE and EE) Technologies Applications	TA	Sustainable energy and low carbon (RE and EE) techniques and practices adopted and implemented in the energy, public and residential sectors of the country	• Completed assessment of other applicable low carbon technologies that can be feasibly implemented in the on-grid and off-grid areas to supplement the planned NAMA and rural electrification projects in Vanuatu • Completed designs and implementation plans of demo projects on sustainable energy and low carbon technology applications that will contribute to the achievement of NERM targets • Published energy performance and impact assessment reports of implemented demo projects; including action plan for community-supported sustainable energy and low carbon initiatives in island communities. • Documented evaluation reports on energy performance and impacts of each demo • Completed design and implementation plans for the replication and/or scale up of demonstrated sustainable energy and low carbon energy projects	GEFTF	164,025	847,200
	Inv	Enhanced confidence in the viability of sustainable	• Completed and operational sustainable energy and low carbon technology application demonstrations in pilot on-grid and off-grid communities.	GEFTF	900,000	11,000,000

[2] These may include: Concessional financing to reduce the levelized cost of technologies in which capital costs are high relative to operating costs (on/off-grid); Lending by commercial banks for small business credit lines (off-grid); Targeted subsidies for low income areas/households (off-grid), and subsidies or other incentives for sale of CNO to diesel-fired power plants (on-grid).

		energy and low carbon technology projects	• Vetted portfolio of follow-up sustainable energy and low carbon technology application projects in selected on/off-grid communities.			
Sub-Total					2,514,025	15,597,200
Project Management Cost					125,701	502,800
Total Project Cost					**2,639,726**	**16,100,000**

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 Energy - Ministry of Climate Change & Natural Disaster (DOE-MCCND)[3]	Grant	14,900,000
Private Sector	Union Electrique du Vanuatu Limited (UNELCO)	Grant	1,000,000
	Vanuatu Utilities and Infrastructure Ltd (VUI)	Grant	100,000
GEF Agency	United Nations Development Programme (UNDP)	Grant	100,000
Total Co-financing			**16,100,000**

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	Vanuatu	Climate Change	N.A.	2,639,726	250,774	2,890,500

E. PROJECT PREPARATION GRANT (PPG)[4]

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 a/	Programming of Funds	(in $)		
				PPG (a)	Agency Fee[5] (b)	Total c = a + b
UNDP	GEF TF	Vanuatu ☐	Climate Change	100,000	9,500	109,500
Total PPG Amount				**100,000**	**9,500**	**109,500**

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[6]

Provide the expected project targets as appropriate.

[3] The stated co-financing amount is the estimated collective budgets of the subsumed activities from various ongoing and planned energy and rural electrification projects that are under the DOE-MCCND and funded by the Government of Vanuatu, and by various donor agencies (EU, AusAid, NZMFAT, WB, and ADB).

[4] PPG 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.

[5] PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

[6] 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.

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 *(direct & indirect)*	484,830 tons CO_2 reduced

PART II: PROJECT JUSTIFICATION

1. Project Description.

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

Vanuatu is an archipelagic country in South Pacific consisting of 86 islands (65 of which are inhabited) that make up over 12,000 km2 of land area. The estimated population of the country as of mid-2016 is about 286,200. Most of the population live in rural areas and rely on subsistence agriculture and barter to meet most of their daily needs. While the economic growth is relatively higher than that in other Pacific Island Countries (PICs), this is mainly in the urban areas of the country and is hardly felt in the rural areas. Foreign investment in tourism and land development mainly drive the country's current economic growth.

Overall, the primary energy supply is by biomass, mainly in rural areas, and petroleum for electricity production and transport in urban areas. About 80% of urban and 17% of rural households have electricity access. The country is endowed with renewable energy resources (e.g., solar, wind, biomass, small-scale hydro, geothermal, ocean energy) but only a few of these (e.g., solar, wind, hydro and some biofuel) are currently being utilized to meet the country's energy requirements. The magnitude of the potentials of such energy resources are actually yet to be fully established, particularly their suitability for meeting the energy needs of the population where such resources are available, for example for rural electrification. Most of the electricity used in the country is generated using diesel fuel oil at 70% on average. The rest of the electricity is produced using renewable energy resources. Only four islands have urban/peri-urban electricity grid systems. There are 2 private power utilities - Union Electrique du Vanuatu (UNELCO) and Vanuatu Utilities and Infrastructure (VUI) that serve 4 concession areas through these grids. The utilities are regulated by an independent government agency, the Utilities Regulatory Authority (URA).

In its aim of achieving an independent, sustainable energy future, the Government of Vanuatu (GoV) formulated in 2013 the National Energy Road Map (NERM), which laid out the country's path to achieving electricity access for all citizens through the utilization of renewable energy for power generation. As stated in its Nationally Determined Contributions (NDC)[7], the main climate change mitigation contribution of the country is the achievement of the outcomes and targets of the NERM, among which is transitioning to 100% renewable energy utilization in electricity generation by 2030. This target calls for the replacement of the fossil fuel requirements for electricity generation in the country, which by 2020, the target is 65% RE-based electricity production. The IRENA Renewables Readiness Assessment Report (June 2015) provided recommendations to meet the NERM targets, calling for the utilities, government and development partners to work with the private sector to support investments in RE-based power generation at the scale needed within the required time, thereby focusing on actions to encourage private investment in renewable energy. Other opportunities for climate change mitigation are also provided in the country's Nationally Appropriate Mitigation Actions (NAMA) program on rural electrification. However, achieving the targets would mean removing some barriers that have been

[7] Vanuatu already signed the Paris Agreement on 22 April 2016. In that regard, its INDC (submitted to UNFCCC on 29 September 2015) is now referred to as NDC. Among the climate change mitigation actions in the NDC that will be facilitated by the proposed GEF project are the: (1) National Energy Road Map; (2) Rural Electrification NAMA; (3) Off grid renewable energy projects under Scaling Up Renewable Energy in Low Income Countries Program; and, (4) Energy efficiency measures to contribute to the target 15% energy savings in the energy sector.

hindering Vanuatu to achieve widespread application of its renewable energy resources for energy production, and to a certain extent also the barriers to the implementation of the RRA and the NAMA recommendations. Also, the successful implementation of the NERM will depend on not only establishing clear roles for the pertinent entities in the country like the Vanuatu Department of Energy (DOE), the URA and other institutions, but also enabling and capacitating them to carry out their roles and responsibilities in the implementation of the NERM. This will also require effective coordination with development partners.

The barriers that have to be overcome to enable the achievement of the energy access, sustainable energy and green growth targets in the NERM are the following:

Awareness and Capacity Barriers: Like the other PICs, Vanuatu has had many RE projects implemented that included information dissemination and awareness raising activities, and the GoV has also advocated for the application of RE technologies for power and non-power purposes. The issue however, is the fact that the impact of these interventions in terms of the level of knowledge and technical skills and attitude of the general public as well as with the national and local government authorities have not significantly changed. There is very limited local capacity for installing and maintaining off-grid renewable energy technologies RETs, and within the GoV and the private sector to sustain the benefits of RE installations. There is also low level of capacity among government institutions in data acquisition, analysis and data management, as well as on the use of existing computer models for sustainable energy and low carbon development, which include among others RE and EE technologies. These are by and large due to the fact that the usual capacity building and public awareness efforts in the country are usually not focused and relevant in the local context. The information dissemination about RE development and utilization are generally limited in scope and audience. Information on RET applications are not easily accessible and are not available in local languages. Moreover, there very limited information materials (in the national language Bislama) for local institutions to train potential RE system installers and maintenance technicians, in areas where such systems can be installed and commercially operated.

Policy and Regulatory Barriers: The recently updated NERM embodies the aspirations and plans of the GoV in the area of energy development and utilization, in support to the country's sustainable economic development and of the country's climate change mitigation targets. It is the policy framework for developing the energy sector in Vanuatu. However, the NERM does not specifically provide the country's energy policy, which is a significant issue that need to be addressed to enable the actions that would motivate interest in developing and sustaining the energy sector. Among these are: (a) Lack of clear and appropriate policies on energy development and utilization; (b) Inadequate enforcement of existing energy policies and strategies, inclusive of the supporting rules/guidance and legislations/regulations; (c) Lack of an effective policy and risk-sharing framework for PPP transactions that will accelerate major private sector investments in energy development and infrastructures; (d) Absence of petroleum energy supply and security policy; (e) Inadequate policy on energy efficiency, which the NERM advocates under a moderate policy scenario the adoption energy efficiency measures and behaviors; (f) No policy for the coconut industry, particularly on the energy uses of coconut oil, e.g., for electricity generation; and, biofuel production for use in land and sea transports; and, (g) Lack of policies regarding financial/fiscal incentives that would encourage private sector (local and/or foreign) capital in sustainable energy projects in the country. In regards, private sector participation in the energy sector, the existing regulatory framework does not provide for IPPs to have PPAs with concession holders, or for concession holders to include the cost of power purchased under these PPAs in tariff calculations. These policy-related issues have to be addressed and eliminated (or at least reduced) if the NERM targets have to be realized. Or if these targets are achieved, these may not be sustained.

Institutional Barriers: The legislation on the authority and responsibilities of the URA and DoE are outdated and have to be reviewed and possibly revised. The DoE does not have oversight of energy use in

other economic and social sectors. For example, DoE is involved in small-scale energy projects in rural areas, but has limited involvement in many projects RE applications in other sectors. The DoE could play an important role in such cases[8], but its current level of capacity is not able substantially play such role. Presently, the coordination of the national energy objectives and strategies to the policies, strategies and work programs of other relevant government entities[9] is inadequate. While this is among the objectives of the updated NERM, this is something that remains as yet-to-be done to realize for example the NERM's green growth targets. In regards electricity production and distribution in on-grid (urban/peri-urban) areas, it is the URA that is mandated to be the regulator for pricing, energy access, standards and monitoring of concession agreements. How the URA and DoE work together in this particular area of electricity generation and distribution is something that is not clear. In off-grid (rural) areas, there is no institutional approach for operations and management (O&M) of power generation and distribution (micro/mini-grid) systems based on prior experience in other PICs and lessons from failed projects in Vanuatu. Lastly, the complex land-ownership issues arising from customary land practices still persist. The process to ensure that land can be used for RE-based projects including the distribution of RE-generated electricity remains unclear. These and the often unclear ownership of lands are main causes of delays in the implementation of larger, on-grid projects or result in the risk of unanticipated costs at a later stage of development.

Financial Barriers: These are 2 privately-owned power utilities (generation and distribution) in Vanuatu Union Electrique du Vanuatu Limited (UNELCO), and Vanuatu Utilities and Infrastructure Ltd (VUI). They operate through concession contracts with the GoV mainly in urban/peri-urban areas. They do not rely on donors for new and replacement diesel power generators, have no government subsidies other than duty-free diesel fuel, and are regulated by the URA to operate in a financially sustainable manner. Nevertheless, grid-connected RE-based power generation projects have financing challenges, mainly due to high capital costs of RE-based power generation systems (geothermal, solar, wind, and hydro), and the high operating costs of biofuel-based power generation, specifically for CNO-based biofuel because of the high value of copra as an export good.

In the context of rural electrification, the major problem is in the off-grid areas. For one thing, there is no off-grid market study to assess the probable market for RE-based power system installations to replace existing diesel-based power generation. Apart from that is the high upfront capital costs for most RE-based energy system projects. The natural limitations of the local market and the small scale of the installations in the off-grid areas make investments on such projects not attractive. In remote places where such systems are in place (e.g., government or donor-funded projects), equipment maintenance and fee collection are big problems mainly due to limited working capital for local suppliers of RE-based power generation system components and spare parts to maintain adequate inventories, apart from limited local capacity for undertaking installations and maintenance. Also in such areas, there is usually limited customer support due to very different customs and language. In general, like in other PICs, developing and utilizing renewable energy resources requires high capital costs. There are also some conflicts where the RE resource can be used for other value added purposes than as fuel (e.g., high operating costs for CNO plants because of the high value of copra as an export good). On the energy user side, some households cannot afford many of the off-grid solutions or do not have the cash to pay for them upfront.

Technical Barriers: Most of the technical barriers that hinder the widespread application of RETs in energy generation and supply in the country is related to the lack of technical capacity in the area of RE-based power generation, and in the lack of accessible technical information, standards and guidance. The 2 power utilities (UNELCO and VUI) are key sources of technical expertise in the energy sector but they

[8] Supposed to be the provision of technical assistance, facilitation of communication and information dissemination, assistance in development of improved regulatory and financial mechanisms, and coordination of energy planning and implementation to maximize the economic benefits of increased and more reliable access to energy.

[9] For example the National Sustainable Development Plan (NSDP), and the Vanuatu Climate Change and Disaster Risk Reduction Strategy 2016-2030 (CCDRRS), which includes low-carbon development as a priority.

still need technical capacity development on the network and supply aspects of the electricity sector. Addressing future issues around integrating new RE-based system capacity into the grids where more sophisticated control systems may be required to manage system stability is something that they would have to be trained. The private sector technical capacity also has to be enhanced with involvements in the development and implementation of RE-based power generation projects in off-grid areas. Currently, there is no in-country technological capacity for the development of larger RE-based energy system projects. As to information regarding RE resources (types, magnitudes, accessibility) whatever data are available, there are sometimes hard to find or access, and often are outdated. In general there is lack of sufficient, good quality, site-specific data for potential RE-based power generation projects. That is because there have been no rigorous RE resource assessments that have been done to gauge potentials in areas identified as places where specific RE resources are available. In regards to RET applications, there is no standards for RET system equipment. For example in the case of solar PV power systems, there are no modular design for SHS and solar mini-grids adaptable to a wide range of requirements, which minimizes spare parts requirements and training needs. There have been a number of technical reports prepared over the years by donor agencies and others on RETs and their potential suitability for the PICs. Some are out-of-date, inaccessible, biased or too technical or academic in style. In on-grid areas, the small size of some grids limit RE system integration potential. Currently, the utilities need to be trained in RE system integration in existing grids, which are necessary to optimize investments in RE-based power generation.

Barriers to Energy Efficiency (EE) for Sustainable Energy: Mitigating climate change through RE and EE is a key objective of the NERM. The Government's focus in this area has been reinforced by the country's NDC. In the NERM, RE & EE are within the sustainable energy priority due to their potential to reduce GHG emissions, and due to the significant synergies between them inasmuch as a reduction in energy (e.g., electricity) demand through EE (e.g., demand side management) will contribute to the reduction of the size (and cost) of the energy system that will be required. However, despite the potential energy and energy cost savings, consumers often fail to carry out EE improvements for a variety of barriers/challenges. There is a lack of awareness of the benefits of EE and of investments and behavioral changes that could make energy use more efficient. As in the case of RE technologies, in many cases, cultural traditions, social norms, and habits limit consumers' willingness to change their behavior. Investing in energy efficient appliances generally involves upfront costs for consumers that may face financial constraints. Furthermore, the type of technical, logistical, financial, and policy barriers that pose challenges to the uptake of energy efficient initiatives in the energy end use sectors of the country are by and large the same as that for RE development and utilization.

The abovementioned barriers, if not properly and adequately addressed will continue to prevent the timely and complete achievement of the set sustainable energy, energy access, and green targets in the NERM.

1.2. Baseline scenario and any associated baseline projects

The baseline projects on energy access, sustainability and green growth that are currently under implementation in the country include:

Projects	NERM Objective	Funding Source
Rural Electrification Program		
Undine Bay Solar PV System (510kW)	Access, sustainability, green growth (electricity)	UNELCO
GPOBA Grid Based Electricity Project	Access (electricity)	World Bank
Efate Ring Project (grid extension)	Access (electricity)	UNELCO

Projects	NERM Objective	Funding Source
Lighting of Luganville Town Streets	Access (electricity)	VUI
Demonstration Rural Biofuel Project (Ambae, Vanua Lava)	Access, sustainability, green growth (electricity)	EU/GoV
North East Malekula Rural Electrification Project	Access (electricity)	EU (Energy Facility 1), GoV, UNELCO
Vanuatu Rural Electricity Project (VREP) Phase 1 (Off-grid households and public facilities)	Access, sustainability, green growth (electricity)	NZMFAT (via World Bank)
Kawene 1.5MW grid-connected solar facility, Efate	Sustainability (electricity)	EU (Energy Facility 2)
Loltong Hydro Project, North Pentecost	Access, sustainability, green growth (electricity)	Governments of New Zealand, Australia, and Vanuatu
Talise Hydro Project, Maewo (Phase 2—installation of power distribution lines)	Access, sustainability, green growth (electricity)	IUCN, Governments of Austria, Italy, and Vanuatu
Solar Light Industrial Centres and Agro-processing Power Stations	Access, green growth (electricity)	Village Infrastructure Angels
National Green Energy Fund to support investments in RE-based electricity access and energy efficiency, especially in rural areas	Access, sustainability, green growth (electricity, petroleum, cooking fuels)	GGGI, GoV
Energy Policies, Legislations and Regulations		
Mandatory standards and labelling system (MEPS) for refrigerators, freezers, air conditioners, and lighting products (Parliamentary approval of the Energy Efficiency of Electrical Appliances, Equipment and Lighting Products Bill)	Sustainability, affordability (electricity)	SPC/Australian Government
Incorporation of MEPS into Government procurement policies for appliances and vehicles	Sustainability, affordability (electricity, petroleum	GoV
Review and modifications to the Geothermal Energy Act, Petroleum Act, and Electricity Supply Act, URA Act, Government Tenders and Contracts Act, and other relevant legislation and regulations.	All (electricity, petroleum, cooking fuels)	World Bank
Operation of Luganville concession area	Affordability, security and reliability (electricity)	GoV/World Bank
Development of a national energy efficiency strategy and action plan	Sustainability, green growth (electricity, petroleum, cooking fuels)	GGGI
Energy Analysis and Studies		
Capacity development on Improved collection, analysis, monitoring, and collation (within a central system) of data on energy end-use by sector and end use.	All (electricity, petroleum, cooking fuels)	GOV
Development of an electrification plan for renewable energy in remote islands	Access, sustainability, green growth (electricity)	GIZ

The abovementioned ongoing baseline projects/activities are mainly on the electricity sector (supply side mainly). Among them are those that were identified in the UNDP-developed Vanuatu NAMA Program.

There are some activities on EE on the demand side but these are all on electricity use. For the utilization of other energy forms, the activities are mainly on the conduct of energy analyses/studies, as well as on the review and modification of existing energy policies, laws and regulations. The country has also identified several climate change mitigation actions in the IRENA RRA Report, and these including those in the NAMA Program form part of the country nationally determined contributions (NDCs). However, with the current energy sector program and strategy, the current level of awareness raising and information dissemination about cost-effective RE technology applications not only for electrical energy purposes, and current level of efforts on conserving energy and practicing energy efficiency, will continue as in the past. This may even persists for a much longer period of time if the current strategy would remain as the primary feature of promoting and implementing actions that are geared towards the enhanced energy access, sustainable energy and low carbon development, notwithstanding the barriers that have hindered the country from achieving its energy (RE and EE) objectives. The opportunities for Vanuatu to achieve its national energy objectives, as stated in the NERM, and reduce GHG emissions while improving the living conditions of its people, particularly in the outer island communities will just be lost if only these baseline projects/activities will be implemented. The realization of significant GHG emission reduction through the facilitation of the enabling environment that will be conducive to the realization of the NERM targets and 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.

1.3. Proposed alternative scenario

The facilitation of the achievement of the sustainable energy, energy access and green growth targets as stated in the NERM is the objective of this proposed GEF project. To achieve this, the identified barriers to the achievement of these specific objectives in the NERM have to be removed. In this regard, a barrier removal approach will be applied for this project. With the assistance of the GEF, the proposed project will facilitate the application of appropriate technological, institutional, financial and policy-oriented options that would enable the removal of the current gaps in the timely achievement of the NERM targets. This will also include actions that will contribute to the eventual implementation of relevant sustainable energy and low carbon initiatives and measures identified and promoted in the Vanuatu NERM and NDC, and the recommendations in the country's RRA and NAMA[10]. This would involve making use, in a rational and cost-effective manner, of available feasible RE and non-RE resources to ensure socio-economic growth that contributes to increased climate resilience, productivity and income generation of the citizens, and GHG emission reduction. The baseline activities of the country will only achieve a portion of the set NERM targets for electricity access in on-grid and off-grid areas of the country; % RE-based electricity generation (inclusive of biofuel-based power generation) by 2020 and 2030. Incremental activities have to be carried out to reach the targets. The combination of the baseline and incremental activities will bring about the realization of the alternative scenario which features the realization of the

[10] The following are the consolidated recommendations of the IRENA RRA in creating the foundations for renewable energy in Vanuatu: (1) Ensuring the policies, regulations and legislation needed to support NERM are in place; (2) Creation of dynamic models of the concession grids to determine how RE-based systems (solar or wind) integration can be done at various grid entry points; (3) Implementation and enforcement of national standards for on-grid solar installations; (4) Creation of an institutional approach for off-grid SHS and mini-grid system O&M based both on prior experience in other Pacific islands and failed projects in Vanuatu; (5) Preparation of a standard, modular design for SHS and solar mini-grids adaptable to a wide range of requirements; (6) Preparation of a standard, modular design for solar mini-grids adaptable to a wide range of requirements; (7) Build capacity for on-grid and off-grid renewable energy technologies; and, (8) Facilitate financing to increase private investment in renewable energy and energy efficiency.

The UNDP NAMA objectives and targets also align well with the recommendations of the RRA, which include creating a sustainable institutional approach for the operation and maintenance (O&M) of mini-grid systems and local capacity-building in off-grid renewable energy technologies. The proposed innovative community-based cooperative off-grid models, including the NAMA's capacity-building aspects, are based on the RRA, as well as the envisaged standard, modular design for solar mini grids that can fit a wide range of requirements.

NERM targets, i.e., 65% share of RE in the national electricity mix by 2020, and 100% of off-grid households with electricity access by 2020. The proposed project will bring about this alternative scenario.

Based on the targets set in the NERM and NDC, and the relevant recommendations of the RRA and NAMA, the focus of the proposed project is on the enhanced utilization of feasible RE resources for electricity and non-electricity applications for supporting socio-economic development in Vanuatu. The priority areas shall be on sustainable energy, energy access, and green growth (low carbon development). The project will cover the following;

1. Improvement of the awareness and access to information of the national and provincial governments and the private sector in the fields of sustainable energy, energy access, and green growth;
2. Facilitation of the enforcement of improved policy and regulatory regimes for sustainable energy
3. Enabling appropriate institutional mechanisms for the effective enforcement of policies and regulations that support sustainable energy and energy access, and facilitate low carbon development;
4. Improving the availability/access to financial resources (local and foreign) for financing sustainable energy, energy access and green growth initiatives; and,
5. Demonstration[11] of the cost-effective application of sustainable energy and green growth initiatives including integrated energy planning, and the design and implementation of energy-related aspects of low carbon development

Component 1: Capacity Enhancement on Sustainable Energy and Low Carbon Development – This component of the project will address the current problems related to the low level of capacity (including awareness and attitude towards) on the various aspects of sustainable energy and low carbon development. The expected outcome of the various outputs that will be delivered by the activities that will be carried out under this component is the improved capacity on (including awareness and attitude towards) sustainable energy, energy access and low carbon development in the energy, public and residential sectors of the country. Among the proposed interventions to improve awareness and attitude toward sustainable energy and LCD is capacity development (which would typically include activities related to information, communication and education). To deliver the required outputs that will bring about this outcome, the following are the indicative activities: (a) Conduct of capacity needs assessment in the areas of sustainable energy, energy access and green growth; (b) Assessment of impacts of previous and ongoing capacity development activities on sustainable energy and low carbon development in the country; (c) Design and implementation of suitable capacity development programs for key stakeholder groups on specific objectives of the NERM; (d) Conduct of capacity building for the existing banks on financing low carbon development projects; (e) Comprehensive evaluation of the implemented capacity building programs; (f) Publication and dissemination of information about the results and outputs of the major activities of the project; (g) Development, establishment and operationalization of an information exchange network for the promotion and dissemination of knowledge on sustainable energy and low carbon development; and, (h) Development, establishment and operationalization of an energy (petroleum and electricity) supply and consumption monitoring and reporting and database system.

Component 2: Improvement of Energy Policy Formulation and Implementation – The policy and regulatory issues concerning sustainable energy and low carbon development in the country will be addressed in this project component. The enforcement of improved policy and regulatory regimes in the application of sustainable energy, energy access, and low carbon development in the energy, public and

[11] The potential demonstrations could include: (1) Application of feasible RE technologies in the power generation sector, e.g., those identified in the Vanuatu NDC Document and in the NAMA Project, as well as in various energy-end use sectors; (2) Design, engineering and financing of feasible sustainable energy (RE/EE technologies, techniques/measures; (3) Piloting of specific policies and strategies for the application of sustainable energy and green growth techniques, measures and practices; and, (4) Application of the integrated energy planning techniques.

residential sectors in the country 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. The indicative activities include: (a) Conduct of policy research, impact (social, economic and environmental) analyses and assessment on sustainable energy and low carbon development policies and regulations (including those from other SIDs), in line with the Vanuatu NERM, NAMA and NDC; (b) Formulation of standards, policies and IRRs on the promotion and application of sustainable energy and low carbon technologies; (c) Formulation of policies on financing incentives for RE-based energy systems (power and non-power) based on completed policy researches and results of implemented low sustainable energy and carbon technology application demonstrations; (d) Conduct of advocacy campaigns for the approval and enforcement of recommended policies that are in line with the NERM on the energy provision, sustainable energy and low carbon development; (e) Development, publication and dissemination of guides and reference documents on integrated energy planning and low carbon development in the context of Vanuatu; (f) Design, implementation and evaluation of pilots for the application of selected sustainable low carbon standards, policies, and IRRs; and, (g) Development and approval of follow-up plan for the enhancement of sustainable energy and low carbon development plans and policies.

Component 3: Institutional Capacity Building on Sustainable Energy and Low Carbon Development – The removal of institutional barriers regarding the planning, implementation and operationalization of the projects that are in line with the NERM, NAMA and NDCs of Vanuatu will be addressed in this project component. The expected outcome from the activities that will be carried out under this project component is the enabling of the effective enforcement of policies and regulations, and implementation of programs and projects on the application of sustainable energy and low carbon technologies through the established institutional framework. The envisioned activities include: (a) Assessment of the current institutional arrangements for implementation of rural electrification projects in line with the NERM, NAMA and NDC; (b) Design and recommendation of a suitable institutional framework that supports the implementation of low carbon development policies, and IRRs; (c) Conduct of advocacy campaigns for the adoption and enforcement of suitable institutional mechanisms that integrate low carbon development with the socio-economic, climate change and disaster management objectives of the country; (d) Conduct of a performance evaluation on the adopted institutional framework and mechanisms; and, (e) Revision and finalization of the institutional framework and mechanisms.

Component 4: Sustainable Energy and Low Carbon Initiatives Financing – This project component will address the market and financial barriers that could seriously affect the achievement of the NERM targets. From the technical assistance and investment related activities that will be carried out under this component the expected outcomes are: (i) Increased availability of, and access to, financing for sustainable energy, energy access and low carbon (RE and EE) initiatives in the energy supply and demand sectors; and, (ii) Increased financing and investments from private sector on sustainable energy and low carbon projects in the energy supply and demand sectors. The tentative technical assistance activities that will deliver the required outputs to bring about the first outcome are the following: (a) Assessment of the applicable financing schemes for sustainable energy and low carbon technology projects in the context of Vanuatu; (b) Design and development of feasible financing models and schemes to facilitate financing of sustainable energy and low carbon technology (power and non-power applications) projects; (c) Conduct of promotional campaigns to government and private sector financing institutions on the various financing models and schemes, including the implementation of necessary capacity building for these institutions on the financing of residential and community-based low carbon technology projects; (d) Detailed design of the selected financing model/scheme; and, (e) Provision of technical assistance services to financing scheme applicants from the energy end use sectors (commercial, industrial, public and residential). The following investment-related activities will produce the necessary outputs that will collectively bring about the second outcome: (a) Conduct of advocacy and promotional campaigns on the approval and funding of the selected financing scheme/model; (b) Establishment of the financing scheme with the selected partner financing institution; (c) Operationalization of the financing

scheme for sustainable energy and low carbon technology (power and non-power) projects; (d) Evaluation of the economic/financial performance of low carbon technology application projects financed either through the established financing scheme; or by private sector investments; and, (e) Development and recommendation of enhanced financing policies for supporting initiatives on low carbon development.

Component 5: Sustainable Energy and Low Carbon (RE and EE) Technologies Applications – This project component will showcase solutions that will address the technical issues that are currently hindering investments on sustainable energy and low carbon technology projects in the energy generation and energy end-use sectors in Vanuatu. There are 2 expected outcomes from the various deliverables that will come from the activities that are planned under this project component. These are the (i) Adoption and implementation of the sustainable energy and low carbon (RE and EE) techniques and practices in the energy and end use sectors (commercial, industry, public and residential) of the country; and, (ii) Enhanced confidence in the viability of sustainable energy and low carbon technology projects. To bring about the first outcome, the following indicative technical assistance activities will be implemented: (a) Assessment of other applicable low carbon technologies that can be feasibly implemented in the on-grid and off-grid areas to supplement the planned NAMA and rural electrification projects in Vanuatu; (b) Preparation and approval of engineering designs and implementation plans of demonstration projects on sustainable energy and low carbon technology applications that will contribute to the rural electrification program of the country and the achievement of NERM targets; (c) Periodic monitoring of the energy and economic performances of the demo projects; (d) Publication and dissemination of the energy performance and economic impact assessment reports of implemented demo projects; including action plan for community-supported sustainable energy and low carbon initiatives in island communities; and, (e) Preparation of detailed design and implementation plans for the replication and/or scale up of demonstrated sustainable energy and low carbon energy projects. For the realization of the second outcome, the following indicative investment-related activities will be carried out: (a) Implementation of the selected demo projects based on the approved engineering designs and plans; (b) Conduct of detailed evaluation of the energy and operational performances of the different sustainable energy and low carbon technology application demonstrations in pilot on-grid and off-grid communities; and, (c) Development of a portfolio of potential sustainable energy and low carbon technology application projects (e.g., scale-up and/or replication of the demos). The results and impacts of the implemented sustainable energy and low carbon technology projects in selected on-grid and off-grid communities, will serve as main bases for the planned follow-up projects that can make use of currently available financing sources such as the private sector, but also the Green Climate Fund (GCF).

It should be emphasized that the abovementioned components (with their specific outcome, outputs and indicative activities) are intended to bridge the current gaps (due to barriers) in achieving the NERM and NDC targets. The proposed GEF project will also assist the achievement of the new green growth (low carbon development) objectives of the country as stated in the updated NERM (2013-2030), particularly on the formulation of appropriate LCD policies; development and showcasing of applicable LCD technologies and measures in the end-use sectors; assisting end-users in the financing of their feasible LCD (RE/EE) projects; and facilitating productive applications of RE (for power and non-power purposes) in rural areas.

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 GOV towards the realization of the sustainable energy, energy access and green growth NERM targets by 2020. These baseline projects/programs are the rather limited efforts of the country to achieve these committed targets. With just these, the full potential for the use of the country's indigenous RE resources, potential for

energy and energy cost savings, clean energy and low carbon technology applications, and associated local benefits (e.g., improved energy services, increased income generation activities, etc.), and GHG emission reductions from the major energy end use sectors will not be realized.

The project will endeavor to enhance the baseline initiatives of the GOV by including added features that will facilitate the enhanced utilization of the country's RE resources, as well as improved low carbon initiatives (practices, techniques and technologies). The NERM targets by 2015 that 40% of the electricity generated in Vanuatu is from RE-based power generation systems, and by 2020, this will be at 65%. The actual results in 2015 show only about 29% of the total electricity generation was from RE resources. Considering a business-as-usual scenario, the forecast %RE electricity level by 2020 will only be about 40% (compared to the NERM target of 65%). The facilitation and enabling of the application of sustainable energy and low carbon technologies is expected to fill the current gap in achieving the targets in 2020 and beyond (e.g., 100% RE electricity by 2030). If the proposed 4-year project will commence in 2018, based on the forecast national electricity generation during the period 2018-2021 in the baseline and alternative scenarios, the potential energy savings in achieving the NERM %RE electricity target is about 833.1 TJ (22,000 kL DFO). If the useful lifetime (average 25 years) of the installations are considered, the maximum potential cumulative energy savings would be about 6,444 TJ (170,000 kL DFO). Note that this is just for achieving the 100% RE target.

The enabling of the achievement of the %RE targets in the NERM will be done through the removal of barriers associated with the low level of enforcement of policies, regulations and institutional mechanisms, limited capacity and knowledge about the application, design, financing and operation of feasible RE-based power generation and green growth initiatives of both the public and private sectors of the country. Most of the barrier removal activities make up the incremental activities that the project will carry out particularly those that the GOV will not be, or presently does not have the capacity for, addressing these barriers. Incremental support activities are necessary to facilitate the demonstrations and piloting of the processes and procedures involved in integrated energy planning, application of the energy-saving techniques and technologies that will encourage the major stakeholders in the various energy end use sectors (public and residential) to embrace, and support these. Without the incremental barrier removal and enabling activities the achievement of the anticipated alternative scenario in the energy end use sectors in Vanuatu, particularly in the off-grid areas will not be realized. More importantly, incremental activities to establish and enforce policy and regulatory frameworks that are supportive (through effective institutional arrangements, financial/fiscal incentives, information sharing, etc.) will be necessary to sustain the replication of sustainable energy, energy access and low carbon initiatives in the country, particularly in the electricity generation sector. The substantial sustainable development benefits that result from the application of such initiatives will not be achieved if the barriers that the GEF can help eliminate will not happen.

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

The global environmental benefits of the proposed GEF project would mainly come from GHG emission reductions (tons CO_2) from fossil fuel substitutions in electricity generation, and other energy end-uses particularly in rural areas using available feasible RE resources. Sustainable energy initiatives that would lead to the improvement of the specific energy consumption of energy end use sectors through improved energy utilization efficiency will also contribute to this. In summary, the GHG emissions reductions would come from: (1) Direct emission reductions from completed sustainable energy and low carbon technology application demonstrations and replications; and, (2) Indirect emission reductions from follow-up sustainable energy and low carbon (RE and EE) technology application projects in the country as influenced by this proposed GEF project. From the realization of the %RE electricity in 2020, the estimated cumulative CO_2 emissions during the project period (2018-2021) is about 62,681 tons. Considering the useful lifetime (average 25 years) of the installed units, the cumulative CO_2 emission

reductions would be about 484,830 tons. Note that this is only from meeting the 100% RE target. Hence, this amount can also be potentially higher when the other LCD demonstrations and replications (non-power applications and energy efficiency) are considered.

The project will also bring about local benefits mainly through contributions to: (1) improvement of the living conditions of the Vanuatu people particularly in the outer islands and allows them to contribute productively to the economy; (2) environment protection and preventive health; (3) diversification of the resource base of the economy; and, (4) strengthening of the balance of payment position of the country.

1.6. Innovativeness, sustainability and potential for scaling up.

Innovation: The following are the innovative features of the proposed project: (1) gap filling interventions to assist in the achievement of the country's sustainable energy, energy access and green growth targets; (2) promotion of community-based RE-based energy system (power and non-power applications), as well as integrated energy planning and policy implementation, including the design and implementation of energy-related aspects of low carbon development; (3) Improvement of the availability/access to financial resources (local and foreign) for financing sustainable energy initiatives; and (4) Preparation of vetted sustainable energy and low carbon technology application projects that will be applied for funding by interested donor agencies and the Green Climate Fund.

Sustainability: In the context of the proposed project objective, the project will involve the creation of the required enabling conditions that through the adoption of supportive policies/regulations and institutional mechanisms to facilitate the widespread application of sustainable energy and low carbon technologies in the energy, residential and public sectors in Vanuatu to help ensure sustainability of the systems and frameworks that will be established under the project. The sustainability of these systems/frameworks will be ensured with the development of a suitable follow-up action plan for approval and enforcement after project completion. During the project preparation stage, the appropriate actions to ensure sustainability of the policies, regulations, and institutional frameworks that will be established and enforced/implemented will be determined.

Potential for Scaling-up: The project is in support of the current plans and programs of Vanuatu in furthering the achievement of its NERM targets. The country is comprised of outer islands where the sustainable RE-based energy systems (power and non-power) demonstrations can be replicated as is, or at a scaled-up configuration. Such demonstrations can be replicated in the outer islands where the communities are keen in getting improved access to energy and energy security. The vetted portfolio of feasible sustainable energy and low carbon technology application projects that will be developed by mid-term of the project implementation would most likely include those that are scale-up and replication of the demo projects Lastly, best practices that will come out from the interventions that will be carried out in the project will also be shared with other PICs and SIDS with similar circumstances of the country, thereby ensuring the scaling up of the project interventions beyond Vanuatu.

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 stakeholders of this project is the Department of Energy - Ministry of Climate Change & Natural Disaster (DOE-MCCND), and to some extent the country's National Advisory Board on Climate Change and Disaster Risk Reduction (NAB). 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 Energy - Ministry of Climate Change & Natural Disaster (DOE-MCCND)	Responsible for communication and coordination with office of the GEF OFP and UNDP on the PIF development, liaison with local governments, in-charge of management of project development
Ministry of Infrastructure and Public Utilities (MIPU)	Provision of data inputs on plans and programs of the country concerning public infrastructure projects of the government on energy.
Utilities Regulation Authority (URA)	Provision of assistance in the identification and analysis of barriers related to the regulation of the utilities (within and outside concession areas), and information about new rural electrification activities.
Union Electrique du Vanuatu Limited (UNELCO) Vanuatu Utilities and Infrastructure Ltd (VUI)	Provision of advice and assistance in the identification and design of demonstrations for the promotion of EE and RE technology applications in power generation, distribution and utilization.
Ministries of Education and Health	Responsible for the coordination, communication and provision of data for the design of project activities in selected islands, particularly in relation to their program on solar energy packages for social institutions
Ministry of Finance and Economic Management (MFEM)	Provision of data inputs on plans and programs of the country concerning donor funded sustainable energy projects, e.g., Vanuatu Infrastructure Strategic Plan.
National Advisory Board on Climate Change and Disaster Risk Reduction (NAB)	Provision of advice and information on the GOV's climate change programs, projects, initiatives and activities.
NGO, Social community and the other social/civic groups	Provision of assistance in the identification and analysis of barriers to the application of sustainable energy and low carbon measures & practices (RE/EE) in village development. Provision of advice in the design of the barrier removal activities of the project.
Private Sector Entities (commercial and industrial)	Provision of assistance in the identification and analysis of barriers to the application of sustainable energy and low carbon measures & practices (RE/EE) in commercial and industrial establishments. Provision of advice in the design of the barrier removal activities.
Residents of island communities (including indigenous people)	Provision of assistance in the identification and analysis of barriers to the application of sustainable energy and low carbon measures & practices (RE/EE) in village development. Provision of advice in the design of the barrier removal activities to ensure these are in local context.
Provincial Governments, Island community leaders	Responsible for the coordination, communication and provision of data for the design of project activities in selected islands, liaison with island leaders in the design and implementation arrangements for the demonstration activities.

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.*

Gender equity is one of the important aspect of this proposed GEF project. During the conduct of the logical framework analysis (LFA) the various issues that are seen as to be posing barriers to the promotion and implementation of sustainable energy, energy access and low carbon technologies applications in Vanuatu will be assessed. Among the issues that will be covered will be those that relate to gender equity and women's role, and will cover potential barriers (if any) posed by gender equity issues, and barriers to: (1) Ensuring gender equity and women empowerment in the promotion and implementation of sustainable energy and low carbon development; (2) Enhancing opportunities to enhance the role and influence of women in the deployment of low carbon technologies and climate change mitigation options, and, (3) The development of gender-sensitive policies in the energy sector and the energy end-use sectors of the country. These project preparation activities will be done, in full

recognition of the important contributions of women in the management and implementation of such measures, and also in the productive and social uses of electricity, the supply of which in rural areas of Vanuatu is what this project will help facilitate. The project design and preparation will also take into account the potentials for the involvement of women working in both management and technical departments of the GOV agencies/institutions who can play important roles in the design, development and implementation of this proposed UNDP-GEF project. Furthermore, the design and preparation of this project will take into account the contributions, impacts and benefits of community based sustainable energy and low carbon technology applications, including 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 as follows:

Risk	Level of Risk	Mitigation Actions
a. Inadequate local capacity to implement the project activities	Medium	Close coordination with other projects in the country will be carried out to take advantage of potential synergies in the management of the project implementation. This is in addition to UNDP country office support that the GOV can request.
b. Limited and high cost of transport to outer islands will not allow regular access to project sites for project monitoring purposes.	Medium	Better planning between public and private marine transport services and other donor-funded projects in carrying out joint outer island missions, including coordination in the scheduling of the outer island trips.
c. Not timely availability of committed co-financing for specific activities of the project.	Medium	The project team shall secure government assurance of co-funding prior to project launching. During project implementation, the project team will closely monitor and ensure the timely availability of co-financing from project partners and co-financers.
d. Unsustained outcomes and benefits of implemented GEF-funded activities.	Medium	The development of a sustainable follow-up plan is part of the project activities. This will be useful for the replication of the demonstrated applicable and feasible sustainable energy and low carbon technologies.
e. Adverse climate-related events may hamper the installation of RE-based power generation units.	Medium	The design and implementation of the RE-based power generation and other low carbon technology applications shall follow proper engineering and construction design and construction that ensure not only structural integrity but also climate resilience. This applies also in the procurement, design/engineering, installation and operation of the pertinent installations[12].
f. Island communities may not support the project implementation promptly and sufficiently	Low	The DOE will be supported by other entities in the execution of this project particularly in the coordination of the project implementation with the project partners. The GOV will set up a capable project team comprised of competent local and international experts to expand the capacity of the local community people in the implementation of the relevant project activities. The DOE's good standing and rapport with many of the island communities will be put to good use to

[12] The design and construction/installation of the physical infrastructures that will be installed will be based on 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.

		actively promote the implementation of this project, and ensure the support of the local communities.
g. Delayed or even failed approval and enforcement of the recommended policies and regulations of the project by the pertinent GOV agencies.	Low	As part of the project activities, advocacy campaigns will be included to gain adequate support from the parliament on the adoption of the recommended policies and regulations. UNDP will assist if necessary.
h. Potential possibility of reduced government support to the project in case of changes in national government administration.	Low	The DOE and other GOV departments involved in the project will monitor political dynamics and will try to resolve any misunderstanding within the project. If warranted, UNDP executive management intervention may be required.
Overall Level of Risk	**Medium**	

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

The design and development of this proposed GEF project includes the identifying and understanding all related ongoing and planned GEF and non-GEF funded projects. The coordination work will be mainly for the purpose of exploring and possibly making use of potential synergies; for ensuring complementarities and building on best practices and lessons learned; and for potential sharing of project resources particularly on transport costs for trips to the country's outer islands. Among these projects are:

- All DOE ongoing and planned projects on sustainable energy, energy access and green growth – Since it is the implementing partner of UNDP for this project, the project development team (PDT) will coordinate with them to determine how these projects can be utilized as baseline activities of the proposed GEF-project. These include the following:

  - GPOBA (Grid Based Electricity Access Project) – AusAid and World Bank
  - Vanuatu Rural Electrification Project (VREP) – NZMFAT and World Bank
  - Melanesia's Million Miracle Programme – Secretariat of Pacific Communities
  - Scaling Up Renewable Energy in Low Income Countries Programme – ADB & WB
  - Biofuel Rural Electrification Project – European Union & GOV
  - Talise Hydro Project – International Union for Conservation of Nature (IUCN) & GOV
  - National Green Energy Fund – Global Green Growth Institute (GGGI)
  - RE-based Off-grid Electrification Master Plan for Remote Islands of Vanuatu - GIZ

The establishment of links with other implementers of related ongoing projects/programs is expected to help in identifying the relevant activities that will build on their respective achievements. The UNDP Joint Presence Office in Vanuatu and the UNDP-Pacific Office (Suva, Fiji) 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, and in the multipartite review meetings.

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 consistent with Vanuatu's National Energy Road Map (NERM), and is actually meant to facilitate the realization of the 2020 sustainable energy, energy access, and green growth targets of the country as stated in the NERM. It is also in line with the country's Second National Communications to the UNFCCC, the country's Nationally Determined Contributions (NDCs) particularly in specific actions and policies related to climate change mitigation actions in response to the country's commitment to the 2015 Paris Agreement. It is also in line with the recommendations in the

IRENA RRA report. Lastly, the project is linked to the projects that are covered in the country's NAMA the overarching target of which, is the provision of off-grid electrification for households, public buildings and institutions as well as businesses. Like the NAMA, the proposed GEF project is intended to help the GOV to achieve the NERM targets, particularly: (a) 100% connection rate for households within and close to concession areas; and, (b) 100% electrification for off-grid households.

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.*

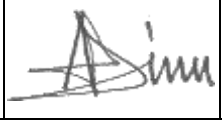
Considering the findings in the ongoing and previous energy projects in the country, the knowledge management system that will be employed in the proposed GEF project will consists of the conduct of training courses for pertinent personnel in the energy and utilities sector, as well as those in the island communities that will participate in the project activities. Coordination with the implementers of ongoing climate change and 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. Based on the preliminary assessments made in coming up with this PIF, there will be special mentoring sessions for specific group of staff who will be carrying out the operations and maintenance of the various demo RE-based energy systems (power and non-power) that are part of the project. Where necessary special mentoring sessions will be provided to operations personnel in UNELCO and VUI, and in the operators of existing micro/mini-grids. Under this project, an information exchange network will be established and operationalized for the promotion and dissemination of knowledge on low carbon development within and outside of the country (including other PICs and SIDS). Part of the project activities will be the establishment and operationalization of an energy supply and consumption monitoring and reporting, database to be housed in the DOE. This aspect of knowledge management, which involve the drawing on of information from a wide variety of sources, will be implemented, not only for the purpose of the country's energy planning but also to achieve an organized usage of knowledge about the energy situation in the country. This will be made possible through the information exchange network that will be established and operationalized under the project. With such network, data/information on lessons learned and best practices in the application of low carbon development techniques and practices, as well as implementation of sustainable energy and low carbon technologies specifically 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 exchange network.

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

A. RECORD OF ENDORSEMENT[13] OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

NAME	POSITION	MINISTRY	DATE
Jesse Benjamin	GEF Operational Focal Point Director – Department of Energy	Ministry of Climate Change & Natural Disaster (DOE-MCCND)	20 July 2016

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies[14] 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		9 Aug 2016	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.

[13] 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.
[14] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF