

# Concept Note

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## **Leveraging the National Green Energy Fund (NGEF) to Achieve Rural Electrification in Vanuatu**

Vanuatu |

28 August 2019



**GREEN  
CLIMATE  
FUND**

# Simplified Approval Process Concept Note

Project/Programme title:	Leveraging the National Green Energy Fund (NGEF) to Achieve Rural Electrification in Vanuatu
Country(ies):	Vanuatu
National Designated Authority(ies) (NDA):	Ministry of Climate Change, Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management Department of Energy - Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management
Executing Entities:	
Accredited Entity(ies) (AE):	* Undefined
Date of first submission/ version number:	8/28/2019 V.1
Date of current submission/ version number	8/28/2019 V.1



*Eligibility for SAP is determined by the review of the concept note and the ESS screening.*

## A. Project / Programme Information (max. 1 page)

<b>A.1. Project or programme</b>	<input type="checkbox"/> Project <input checked="" type="checkbox"/> Programme	<b>A.2. Public or private sector</b>	<input checked="" type="checkbox"/> Public sector <input type="checkbox"/> Private sector	<b>A.3 RFP</b>	Not applicable
<b>A.4. Indicate the result areas for the project/programme</b>	<p><u>Mitigation:</u> Reduced emissions from:</p> <input checked="" type="checkbox"/> Energy access and power generation: 100% <input type="checkbox"/> Low emission transport: 0% <input type="checkbox"/> Buildings, cities and industries and appliances: 0% <input type="checkbox"/> Forestry and land use: 0%				
<b>A.5. Impact potential</b>		A.5.1. Estimated mitigation impact (tCO <sub>2</sub> eq over project lifespan)	583,200 tCO <sub>2</sub> eq		
		A.5.2. Estimated adaptation impact (number of direct beneficiaries)	direct beneficiaries		
		A.5.3. Estimated adaptation impact (number of indirect beneficiaries)	indirect beneficiaries		
		A.5.4. Estimated adaptation impact (% of total population)	% of the country's total population		
<b>A.6. Financing information</b>					
<b>A.6.1. Indicative GCF funding requested (max 10M)</b>	Amount: 9,500,000 Currency: USD Financial Instrument: Grants				
<b>A.6.2. Indicative co-financing</b>	Amount: 250,000 Currency: USD Financial Instrument: Subordinated loans Institution: PRIVATE SECTOR Amount: 2,770,000 Currency: USD Financial Instrument: Grants Institution: PACIFIC REGION INFRASTRUCTURE FACILITY - MFAT NEW ZEALAND Amount: 5,640,000 Currency: USD Financial Instrument: Grants Institution: SCALING UP RENEWABLE ENERGY PROGRAM - WORLD BANK Amount: 1,360,000 Currency: USD Financial Instrument: Grants Institution: IDA - WORLD BANK Amount: 1,500,000 Currency: USD Financial Instrument: Equity Institution: IDA - WORLD BANK Amount: 7,940,000 Currency: USD Financial Instrument: Equity Institution: CUSTOMER CONTRIBUTIONS Amount: 40,000 Currency: USD Financial Instrument: Grants Institution: NATIONAL GREEN ENERGY FUND				
<b>A.6.3. Indicative total project cost (GCF + co-finance)</b>	Amount: 29,000,000 Currency: USD				
<b>A.6. Estimated duration of project/ programme:</b>	disbursement period: 48	<b>A.7.2. Estimated project/ Programme lifespan</b>	120		

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	repayment period, if applicable:		
<b>A.8. Is funding from the Project Preparation Facility needed?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>A.9. Is the Environmental and Social Safeguards Category C or I-3?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>A.10. Provide rationale for the ESS categorization (100 words)</b>	<p>The proposed project will provide “access to energy” equipment i.e solar refrigeration systems, solar equipment to rural households and MSMEs, where there is no ESS issues; including solar equipment for rural mini grid systems to complement current rural electrification program - the Vanuatu Rural Electrification Project (VREP) administered by the World Bank - with proven technology under the global lighting initiative and minimal ESS risks.</p>		
<b>A.11. Has the CN been shared with the NDA?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>A.12. Confidentiality</b>	<input type="checkbox"/> Confidential <input checked="" type="checkbox"/> Not confidential
<b>A.13. Project/Programme rationale, objectives and approach of programme/project (max 100 words)</b>	<p>The proposed project will provide solar PV based electricity to around 16,000 rural households (28% of total households) in Vanuatu, leveraging from the Vanuatu Rural Electrification Project (VREP), National Green Energy Fund (NGEF) and Solar Refrigeration for Vanuatu Rural Tourism Operators Project (SRVRTOP). It aims to accelerate progress towards the achievement of 100% rural electricity access and close to 100% electricity generated from renewable energy resources by 2030.</p> <p>The Vanuatu NAMA Report (2014), IRENA RRA Report (2015) and INDC Report (2015) clearly states that the country is ready to transition to 100% renewable energy in the electricity sector by 2030. This target would replace nearly all fossil fuel requirements for electricity generation in the country and be consistent with the National Energy Road Map (NERM) target of 65% renewable energy by 2020 and 100% by 2030. The NERM target for overall emissions by 2030 in the energy sector would be 72Gg.</p> <p>The VREP addresses rural electrification in two phases - phase one was launched in January 2016 which focuses on "plug and play" solar home systems (5 Watt to 30Watt) and phase two was launched in October 2018 (through to 2022) aimed at meeting future energy demand through larger capacity solar home systems and community based micro grid development.</p> <p>In 2017, the SRVRTOP installed 10 solar refrigeration systems and conducted skills development and training workshops to improve livelihoods and electricity access, reliability and affordability for small rural tourism operators in selected off-grid sites in Vanuatu that enables diversification of services and improved income streams. In 2018, building on from this work, the Global Green Growth Institute (GGGI) supported the development of a Guideline on Renewable Energy and Energy Efficiency for Rural Bungalows which can be adopted to other rural MSMEs throughout Vanuatu.</p> <p>Moreover, the Government of Vanuatu launched the NGEF in August 2018 together with appointment of its Board members to oversee renewable</p>		

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energy development programs and implement national energy policies. This project will be providing partial subsidies to end users who are eligible or identified as poor with limited income households, will utilize VREP established mechanism. In identifying the beneficiaries, NGEF considers up to 15% of each community in the country who will be eligible for such a grant. This is addressed in the NGEF Operations Manual - Financial Products.

### B. Project / Programme details

#### B.1. Context and Baseline (500 words)

The Republic of Vanuatu is an archipelago (Western Pacific Ocean) of over 80 islands stretching 1,300 kilometers from North to South. Vanuatu is located in a seismically and volcanic active region and has high exposure to geologic hazards, including volcanic eruptions, earthquakes, tsunamis and landslides. The country's latitude places it in the path of tropical cyclones, and it is subject to cycles of El Nino and La Nina, which, respectively, increase the risks of droughts and floods. Future climate change and sea-level rise threaten to exacerbate the risks posed by tropical cyclones, coastal and river flooding, coastal erosion, land-slides, hailstorms, heavy rainfall events, and droughts. Climate-related disasters have had huge impacts on the economic growth and national development.

In Vanuatu's Second National Communication, Inventory for Greenhouse Gases has been calculated for the base year 2000 using the revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories. In 2000, Vanuatu emitted 69.16Gg CO<sub>2</sub>e which is a 26% increase since the first inventory, which was published in 1999 and covered emissions for base year 1994. The energy sector is the main source of CO<sub>2</sub> emissions and mainly due to combustion of fossil fuel. The quantity of CO<sub>2</sub> emissions increased from 585.39Gg CO<sub>2</sub>e in 2000 to 720.66Gg CO<sub>2</sub>e in 2010. A third National Communication is currently being prepared by the Ministry of Climate Change Adaptation, Meteorology & Geo-Hazards, Environment, Energy and Disaster Management.

The proposed project is designed strategically to align with the current energy pipeline to help Vanuatu meet its target of 100% electrification and 100% renewable energy sources by 2030. Moreover, it aims to improve energy access for households and businesses in rural and peri-urban areas resulting in improved livelihoods, job creation and greater opportunities for income generation. Its goal is to contribute to the country's NERM target of over 73Gg of CO<sub>2</sub>e to be saved by 2030. The proposed project will complement VREP a project that was included in the Vanuatu Investment Plan for the Climate Investment Fund (CIF) Scaling up Renewable Energy Programme for Low Income Countries (SREP) to lobby for funding. This proposed project will also scale up the SRVRTOP and further strengthen NGEF to facilitate investment in renewable energy in Vanuatu.

This proposal, initiated by the NGEF, has been endorsed by the Vanuatu Climate Finance Working Group under the National Advisory Board on Climate Change and Disaster Risk Reduction (NAB). NAB is well resourced and positioned, being the supreme policy making and advisory body for all disaster risk reduction and climate change initiatives. Thus, this proposed project has been prioritized in the current draft GCF Country Programme.

The NGEF has been established to serve as the national financing vehicle for Vanuatu's energy sector. It plays a crucial role in increasing electricity access and renewable energy investments to achieve the NERM targets in the long-run by consolidating and disbursing financing to green energy projects through transparent and systematic process. These objectives are in line with the INDC Report (2015) of Vanuatu to achieve 100% electrification by 2030. The same target is also highlighted in the National Sustainable Development Plan (2016-2030) adopted by GoV in January 2017.

In 2018, the result of the NGEF market demand and technology feasibility study (under GCF

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Readiness VUT-RS-003) conducted on five (5) islands in Vanuatu showed that rural households lack appropriate rural banking services and formal employment opportunities, thus relying on subsistence farming which is one of the main cause of low cash flows and poor well-being. To address this, recommendation includes partnering with micro-finance schemes and cooperatives that have established networks in rural areas. For instance, the Vanuatu Women's Development Scheme has over 7,000 rural members and aims to eradicating poverty by empowering women in rural villages with the opportunity to start, grow and maintain sustainable, income generating micro-enterprises. It is envisioned that at least more than half of beneficiaries from the project will be women either engaged as members of associations for household use or desiring an energy system to support an existing or planned household business ideas.

The proposed project will scale up these projects: (1) VREP has provided 11,000 households with plug and play solar home systems in 2018 and with phase two, more demand for larger domestic systems have been launched; and (2) SRVRTOP has provided 10 solar refrigeration systems and with additional systems, the project aims to benefit more small rural tourism operators in off-grid sites in Vanuatu.

### B.2. Project / Programme description (1000 words)

Funding under this Project will support the GoV to take a long-term view focused on achieving sustainable results. This means that its activities should go beyond providing one-off support, to catalyze investments with lasting effect, by devoting resources to develop institutions, processes, and arrangements that ensure sustainability and transformational impact.

With regards to national contributions to this proposal, the GoV has already committed itself to raise funds through electricity consumption levies collected from two major electricity concessions (on Efate Island and on Santo Island). The total leverage from national sources would be approximately US\$280,000 per annum. In 2018, the GoV through the Council of Ministers (Decision Number 128/2018) approved a levy of approximate US\$0.0015 (0.17Vatu/kWh) and US\$0.017 (2Vatu/kWh) on electricity consumption for Port Vila (Efate) and Luganville (Santo) electricity concessions respectively.

The Council of Ministers further approved funding support from the Luganville electricity concession to support the NGEF's first green energy project on May 2019 (Decision Number 093/2019). To date, these levy supported NGEF development and initial operationalization. Other commitments from the VREP have been finalised and approved between GoV and the World Bank. Thus, the proposed project will allow the NGEF and VREP to fast track progress of reaching the NERM targets through focused ongoing projects supplying RE and EE applications for rural domestic and rural commercial use.

Collaborating with the VREP initiative will be beneficial. VREP has strengthen local energy retailers to incorporate quality standards on solar products, encourage product warranties, establish customer grievance and subsidy mechanisms. The delivery mechanisms or partners<sup>[1]</sup> are essential to ensure that all products (RE and EE products) will be deployed through locally approved VREP vendors.

The NGEF prioritizes energy access and sustainable energy for off grid areas of Vanuatu focusing on the 40,000 households with no access to electricity. This projects targets a significant portion 16,000 rural households, thus bringing opportune transformation to households by offering a cost effective energy supply from Renewable Energy (RE), thus increasing fundamental needs in education and health for vulnerable individuals, building in a sustainable community way of life which is vital for an LDC status country such as Vanuatu.

The NGEF will leverage existing work from the World Bank administered VREP project, thus meeting future growth of households in urban and rural areas. From 2016 to 2018, VREP electrified 11,000 households with plug and play solar home systems. With the phase two of the VREP project,

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more demand for larger domestic systems have been launched. Furthermore, an NGEF Market Demand Report was prepared in 2018 through GCF Readiness (VUT-RS-003) stated that potential project beneficiaries are “climbing the energy ladder”. This means that once customers have access to a lighting solution, they begin to express demand for other solar appliances such as freezers, fans, TV and other household appliances.

**Component 1** of this Project is focused on scaling up a solar refrigeration for rural bungalows that was piloted through GGGI in 2017 for 10 sites. This is an example of energy for productive use in rural communities and over a short period of time, can result in more cash flow within a rural

community. This component expands the nature of business from the original pilot focus to include other businesses such as locally registered cooperatives, fishermen associations and privately owned trading businesses due to the high demand of solar freezers by these businesses, and also is in line with current government policy to enhance electricity access to productive sectors of the economy. These businesses will be required to make an upfront partial financial contribution to meet the cost of the solar freezers.

**Component 2** targets solar home systems offered under VREP phase two, which basically aims to increase the subsidy rate currently offered from 33% to 50%. Given the high capital cost of these larger capacity systems compared to those offered under VREP phase one, coupled with lower income opportunities prevailing in rural communities, most rural people cannot afford the remaining 67% upfront cost of these systems. Therefore, the additional subsidy grant is anticipated to ease the burden on the rural customers by making them more affordable. Under this component, 8,400 households in rural Vanuatu are anticipated to connect to a cleaner energy supply. The solar PV systems supplied under this component fall under standards set by the VREP.

**Component 3** complements component 2 of VREP phase two by adding two additional mini grid systems on two sites in Vanuatu and funding contribution to one of the five earmarked sites to upgrade the capacity, given the size of the area and demand for energy.

**Component 4** provides grant support to the NGEF for capacity building, training and skills upgrade to existing staff, and financial management systems enhancement. Part for the funding will provide technical assistance support to the Fund.

The Accredited Entity will oversee, supervise, manage and monitor the Project as funds for this project will be channelled from GCF to them as nominated by the Vanuatu NDA. A Project Management Unit (PMU) will be established within the Department of Energy and manage implementation alongside the established NGEF Unit and VREP PMU for shared resources and local capacity development. The PMU will ensure accountability and transparency of procedures during project implementation, as well as alignment of activities with VREP and NGEF. For the NGEF, the fiduciary arrangements are described in the Operations Manual while for VREP is its Project Operations Manual.

**Financial Risk:** Lack of funding raised from donors and lack of affordability by end-users to pay for energy services will constraint scaling up of NGEF and VREP activities.

**Mitigation:** Fundraising must be the highest priority for the NGEF Board and management especially at the beginning of NGEF operations to secure sufficient financial resources prior to disbursement.

**Operational Risk** - Fund management with different financial products.

**Mitigation:** GGGI will provide technical support and training to NGEF Fund Manager, as required.

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Through the grant, capacity building and training for skills development of NGEF staff and technical assistance to enhance NGEF's financial management system and operations will be provided.

[1] Source: Table 16, NGEF Market Demand Report, 2018

### B.3. Expected project results aligned with the GCF investment criteria (500 words)

**Impact:** It is estimated that 76,700 people, 16,000 households (28% of total households in Vanuatu) will have access to renewable energy and/or energy efficient equipment through the proposed project. This will result in emission reduction of 583,200 tCO<sub>2</sub>e over a lifespan of 10 years.

**Paradigm shift:** The NGEF is designed to meet the national target of 100% electrification generated from renewable energy sources by 2030. This transition will facilitate capital investment opportunities, which aims to improve energy access through renewable energy and energy efficient technology applications for households and businesses in rural and peri-urban areas resulting in improved livelihoods, job creation and greater opportunities for income generation. As an island nation, majority of these households will instantly have access to clean and renewable sources of energy to meet their needs. An average rural household will save cash for other basic needs, which were absent due to monthly expense on energy expense e.g. gasoline for small portable generators. The proposed project is a result of scaling up ongoing (VREP) and completed (SRVRTOP) projects which clearly presents its potential to expand to other off grid areas in Vanuatu i.e. addressing the energy access gap.

**Sustainable development:** The NGEF will be a first kind of revolving fund in Vanuatu to try achieving self-sustainable development. For VREP it use quality and certified solar equipment and has develop an Environmental Code of Practice (ECOP) for used and broken solar equipment to be collected from rural areas.

**Needs of recipient:** According to the Climate Public Expenditure and Institutional Review (CPEIR, 2014) report for Vanuatu states that Vanuatu has been receiving a lower share of adaptation funding than most other Pacific island countries. To adequately adapt to the impacts of climate change, starting now, the annual cost is estimated to be 1.5% of a country's GDP. For Vanuatu, this equates to an investment of US\$9.5million per year. This is substantially higher than the amount of development funding currently being spent on projects that have Adaptation as their principal objective.

The NGEF is described as a unique project in Vanuatu simply because of its high level support and its focused driven to meet national energy targets by mobilizing and coordinating alongside major rural development projects. It will support the country to fund raise towards strong and resilient economic growth, taking into account the fact that total aid receipts are approximately 10% of country's GDP.

In addition, the NGEF market demand assessment identifies various barriers of accelerating renewable energy and energy efficiency in Vanuatu, and proposes interventions that can mitigate these barriers[1]. In brief, these barriers include i. regulatory landscape and enabling environment, ii. energy demand for households, iii. energy demand for SMEs, iv. supply from vendors and v. channels and access to financial mechanisms. Accordingly, the proposed mitigation actions include i. support with implementation or enforcement of quality assurance, ii. stimulate and facilitate uptake of larger

energy solutions linking to VREP 2 thus inventory line with supplier are enriched, iii. support suppliers to partner with financial institutions and civil society networks this end-user financing as well as working capital is raised, iv. stimulate combined imports, and v. implement smart financing between suppliers and financial institutions.

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### Country ownership:

This project is well aligned within the framework of the Vanuatu INDC, which outlines an urgent need to displace CO<sub>2</sub> emissions from the energy sector specifically from combustion of fossil fuels to renewable energy. The NGEF and VREP initiative addresses this and strict enforcement mechanisms are place for its solar equipment providers to supply quality tested products in the country to households and SMEs. The Vanuatu INDC, the NERM and the NSDP People Plan 2030 are the pillar for sustainable energy development and are supported to the highest level of Government. The NERM and INDC are over sighted by the Ministry of Climate Change, while the NSDP is over-signed by the Office of the Prime Minister.

This proposal was initiated by the Department of Energy under the Ministry of Climate Change and is a directive of the NGEF Board to seek external funding support. The Board is comprised of senior officials from the Ministry of Climate Change, the Ministry of Finance and Economic Management, the Department of Strategic Planning, Policy and Aid Coordination, the Department of Provincial Affairs, the Department of Women's Affairs and a civil society organization representative.

The Vanuatu NAB's Project Screening Committee has reviewed this concept note and took it further for discussion and endorsement at a NAB Meeting held in November 2018.

### Efficiency and effectiveness:

It is estimated that a total of 583,200 tCO<sub>2</sub>e will be avoided over 10 years. Assuming that a rural household demand for electricity usage averages a very modest 3600 kWh per year - a value that is at the low end of household usage on rural grid extensions in the Pacific Islands - then generation for a village grid by a small low efficiency diesel generator could be expected to emit a total of around 0.9 kg of GHG per kWh delivered. Annually that would be a total of about 3,240 kG of CO<sub>2</sub> emitted per household served. It is planned that around 16,000 rural households (housing around 76,700 persons) will be provided electricity access under this funding so the total avoided GHG emissions for the proposed project would be at least 58,320 metric tons of CO<sub>2</sub> per year through the use of solar PV generation instead of diesel.

- a) Total project financing US\$ 29.08M
- b) Requested GCF amount US\$ 9.5M
- c) Expected lifetime emission reductions (10 years) 583,200 tCO<sub>2</sub>eq
- d) Estimated cost per tCO<sub>2</sub>eq (d = a / c) US\$49.86/ tCO<sub>2</sub>eq
- e) Estimated GCF cost per tCO<sub>2</sub>eq removed (e = b / c) US\$16.29/ tCO<sub>2</sub>eq
- f) Total finance leveraged US\$ 19.48M
- g) Public source finance leveraged US\$ 17.73M
- h) Private source finance leveraged US\$ 1.75M
- i) Total Leverage ratio (i = f / b) 2.05%
- j) Public source leverage ratio (j = g / b) 1.89%
- k) Private source leverage ratio (k = h / b) 0.19%

[1] Source: Table 17, NGEF Market Demand Report, 2018

## C. Indicative financing / Cost information (max. 2 pages)

### C.1. Financing by components

Please provide an estimate of the total cost per component and disaggregate by source of financing.

Component	Output	Indicative cost	GCF financing	Co-financing
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		(USD)	Amount (USD)	Financial Instrument	Type	Amount (USD)	Financial Instrument	Name of Institutions
1.	Provision of Solar Freezer for Rural Bungalows, Cooperatives and rural Industries	1,250,000	1,000,000	Grant	Private	250,000	Loan	Private Sector in Vanuatu
2a	Provision of Solar Home Systems (SHS) in rural areas: VREP 2 Component 1	4,520,000	3,000,000	Grant	Public	1,520,000	Grant	PRIF MFAT New Zealand
2b		3,460,000	0	Other	Private	3,460,000	Grant	SREP - World Bank
2c		300,000	0	Other	Private	300,000	Grant	IDA - World Bank
2d		7,440,000	0	Other	Public	7,440,000	Other	Customer contribution
3a.	Provision of solar equipments for 2 mini grids in rural areas.	4,750,000	3,500,000	Grant	Public	1,250,000	Grant	PRIF MFAT New Zealand

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	(1))							
3b		2,180,000	0	Other	Private	2,180,000	Grant	SREP - World Bank
3c		1,500,000	0	Other	Private	1,500,000	Loan	IDA - World Bank
3d		1,060,000	0	Other	Private	1,060,000	Grant	IDA - World Bank
3e		500,000	0	Other	Public	500,000	Other	Customer Contribution
4. NGEF Capacity Building Support	Technical support and skills development for NGEF staff and Board	520,000	500,000	Grant	Public	20,000	Grant	Vanuatu National Green Energy Fund
5. Project Management Cost	Effective management of Project	1,520,000	1,500,000	Grant	Public	20,000	Grant	Vanuatu National Green Energy Fund
<b>Indicative total cost (USD)</b>		29,000,000	9,500,000	19,500,000				

*For private sector proposal, provide an overview (diagram) of the proposed financing structure.*

### C.2. Justification of GCF Funding Request (300 words)

The Government of Vanuatu is fully committed to achieving its INDC targets and has injected initial funding support through NGEF but greater financial support is required for renewable energy programs to be implemented. Without GCF funding, under a business as usual scenario, inadequate technical and financial capacity at the national and local level will keep off grid areas in Vanuatu with limited/no access to renewable energy. GCF funding is therefore vital to initiate progress towards narrowing/closing the energy access gap targeting rural areas in the country.

### C.3. Exit Strategy and Sustainability (300 words)

The sustainability of each project components will be addressed separately through each Project. For the NGEF, a legislation has been established, along with its Business Plan and Operational Manual. **The NGEF is a Government initiative designed as a revolving fund, and is directly responsible to support the NERM implementation.** There are three sources of funding for the NGEF which will allow the Fund to operate and disburse funding for Renewable Energy financing. The current Funding sources below will ensure the sustainability of the Fund:

- 1) **Domestic funding** sourced from the Government's budget and/or extra-budgetary sources linked to the electricity concession areas, and any other financial streams allocated to the Fund by GoV, including environmental taxes, levies, and similar instruments introduced for this purpose.
- 2) **International funding** provided by bilateral and multilateral entities, public and private sector donors and investors in the form of grants or concessional loans.
- 3) **NGEF income**, a revolving fund will generated interest from financial products distributed through intermediaries.

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In May 2019, the second tranche of domestic funding of USD259,000 was approved by the Council of Minister and this contribute towards operations of the NGEF and for the NGEF to deliver its first green energy project. A further contribution is expected from a levy of 0.17VT (US0.0015) per kWh for over 13,000 customers from the Port Vila Electricity Concession per annum and this will commence sometime in 2019 pending official amendments to the concession contract.

For the VREP, DoE will appoint an Owner's Engineer/Technical Advisor that will prepare the conceptual designs, technical specifications and tender documentation for each mini grid system, support preparation of the necessary safeguard documents and supervise the construction of the mini grids and development and implementation of any Environmental and Social Management Plans. The procurement arrangements for the mini grids will depend on two options identified by the GoV. Under Option 1 the mini grids will be procured under a competitive tender for detailed design, construction and commissioning by a Contractor; the mini grids will be operated and maintained by a Service Provider (UNELCO Ltd or VUI Ltd ) whose current concession is adjacent to the mini grid; and the Service Provider will be party to the management contract until such time as the concessions come up for re-tender and the mini grids are "rolled into" the concession areas. Under Option 2, the mini grids will be procured under a competitive tender for the detailed design, construction, commissioning and operation and maintenance by a Contractor/Service Provider.

The NGEF Fund Manager will work closely with the Project PMU to carryout Monitoring and Reporting for this project. The Fund Manager will prepare Financial Statements for the NGEF Board. The Fund Manager will also report the SAP component separately on its Financial Statements. The NGEF Board will inform the NDA who will review and submit Annual Progressive Report to the GCF, World Bank, Government of New Zealand and Government of Vanuatu.

### C.4 Stakeholders engagement in the project or programme (300 words)

In August 2018, Honorable Ham Lini Vanuaroroa, the Minister of Climate Change launched the NGEF and made a formal request to the GGGI to seek external funds to support initial activities of the Fund. GGGI further held an Investment Forum for the NGEF which brought together representatives from NAB, development partners present in Vanuatu and the pacific region, including energy retailers and financial intermediaries. Using prior knowledge from the NGEF Market Demand Assessment information from survey collected from 5 islands in Vanuatu, also from the Solar Freezers for pilot project, and relevant workshops, a first draft concept note was prepared. The draft concept note was submitted to NAB and reviewed by its project screening committee.

This proposal has been consulted with the Vanuatu NAB Members in November 2018 and listed in the project pipelines of the draft Vanuatu GCF Country Program.

### D. Annexes

- ESS screening check list (Annex 1)
- Map indicating the location of the project/programme (as applicable)
- Evaluation Report of previous project (as applicable)

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### Annex 1: Environmental and Social Screening Checklist

#### Part A: Risk Factors

Please indicate your answers to the questions below and provide an explanation on the response selected. In cases when the TBD response has been selected please explain briefly why you are not able to determine now and when in the project cycle the question will be addressed.

If the criteria is not applicable to the project you may write N/A in the justification box.

Exclusion criteria	YES	NO
Will the activities involve associated facilities and require further due diligence of such associated facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
This project will involve Solar PV Technologies that meet Lighting Global standards. It is assumed that all installations of PV Systems to the beneficiary will already have an existing residential, commercial or a rural bungalow house. This will also be one of the selection criteria used to identify potential project sites.		
Will the activities involve trans-boundary impacts including those that would require further due diligence and notification to affected states?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
N/A		
Will the activities adversely affect working conditions and health and safety of workers or potentially employ vulnerable categories of workers including women and children?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The project will engage with approved and licensed Renewable Energy Suppliers, to supply and install PV Solar systems to beneficiaries therefore not likely to engage or employ vulnerable categories of people. Also by using approved suppliers for existing energy programs like the Vanuatu Rural Electrification Program (VREP), this project will comply with code of practices, ethics and approved standards set by the World Bank and the Department of Energy.		
Will the activities potentially generate hazardous waste and pollutants including pesticides and contaminate lands that would require further studies on management, minimization and control and compliance to the country and applicable international environmental quality standards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
At the very early stages of the project, there will be less pollution as the Solar PV systems are brand new, however between 5 to 15 years of usage there will be several system components that will require replacement such as Solar batteries and Inverters. The Government of Vanuatu is setting up polices and mechanisms to address E-waste and this will be taken into account when it becomes effective. In the interim period this project will comply with the current VREP Project (due to similiar suppliers for this Project) is implementing an Environmental Code of Practice (ECOP) where by used solar batteries and broke solar components are brought back to the supplier (through a rebate initiative) and are then disposed through recycling companies in the country.		
Will the activities involve the construction, maintenance, and rehabilitation of critical infrastructure (like dams, water impoundments, coastal and river bank infrastructure) that would require further technical assessment and safety studies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Solar PV systems for this project are in the range of 200W to 1,00W and will be mounted on cyclone resistant aluminum frames attached to roofing structures, therefore no major construction involved. Installations will be made using power and hand tools and be undertaken by certified electricians. There will be one technical study to be undertaken for Component 3 in		

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relation to setting up 2 Rural Mini- Grid Electrification Systems, and this study is included in project Component 5 - Project Management Cost and should be undertaken during the first year of the project.		
Will the activities potentially involve resettlement and dispossession, land acquisition, and economic displacement of persons and communities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
N/A		
Will the activities be located in or in the vicinity of protected areas and areas of ecological significance including critical habitats, key biodiversity areas and internationally recognized conservation sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
As a small island state, Vanuatu authorities such as the Department of Environment, Department of Agriculture, Department of Fisheries to name a few are always promoting environmental protection in communities, therefore this project will comply with the current polices and at the very least will ensure their is proper training to the end users of these Solar PV systems. The project will also ensure its beneficiaries residing near these project areas will need to be aware of the current policies, and thes can be done through awareness and posters.		
Will the activities affect indigenous peoples that would require further due diligence, free, prior and informed consent (FPIC) and documentation of development plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FPIC awareness will be required prior to Solar PV systems installation at Community and Public Institutions, this is so that users are informed on how to care and properly use the solar PV Systems. Operators whom will be carrying out O&M will also need to be made aware of FPIC as they are entering rural communities to do their work.		
Will the activities be located in areas that are considered to have archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values or contains features considered as critical cultural heritage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
N/A		

### Part B: Specific environmental and social risks and impacts

Assessment and Management of Environmental and Social Risks and Impacts	YES	NO	TBD
Has the E&S risk category of the project been provided in the concept note?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Has the rationale for the categorization of the project been provided in the relevant sections of the concept note?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are there any additional environmental, health and safety requirements under the national laws and regulations and relevant international treaties and agreements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
This project will comply with all relevant national policies on environment, health and safety. On a day to day basis regular consultations with key government agencies occur providing keys messages and up to date information which are then directly passed on to project beneficiaries during consultations.			
Are the identification of risks and impacts based on recent or up-to-date information?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project component 1 (Solar Freezers) and 2 (Solar Home Systems) are in implementation stage			

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and have documents and recent reports can be accessed through the Vanuatu Department of Energy website ( <a href="http://www.doe.gov.vu">www.doe.gov.vu</a> ) and for component 3 (Rural Mini Grid) - there has been several reports and a survey compiled in 2018 to confirm energy demand on the two sites.			
Labour and Working Conditions	YES	NO	TBD
Will the activities potentially have impacts on the working conditions, particularly the terms of employment, worker's organization, non-discrimination, equal opportunity, child labour, and forced labour of direct, contracted and third-party workers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The project will engage with approved and licensed Renewable Energy Suppliers, to supply and install PV Solar systems to beneficiaries therefore not likely to engage or employ vulnerable categories of people. Also by using approved suppliers for existing energy programs like the Vanuatu Rural Electrification Program (VREP), this project will comply with code of practices, ethics and approved standards set by the World Bank and the Department of Energy.			
Will the activities pose occupational health and safety risks to workers including supply chain workers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
N/A			
Resource Efficiency and Pollution Prevention	YES	NO	TBD
Will the activities generate (1) emissions to air; (2) discharges to water; (3) activity-related greenhouse gas (GHG) emissions, (4) noise and vibration; and (5) wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
N/A - the project only involves installation of Solar PV systems for rural bungalows, public institutions and rural households, therefore NOT involving activities mentioned above( 1-5).			
Will the activities utilize significant amount of natural resources including water and energy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The main resource for this project is the SUN. Although using renewable energy, it is assumed that most of the projects sites are distributed and systems varying in scale. For instance, there a community of 50 households may have two rural bungalows, no public institution and 5 eligible rural households therefore installations will vary depending on energy demand and location of these households are not clustered typical of Vanuatu communities.			
Will there be a need to develop detailed measures to reduce pollution and promote sustainable use of resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Being the executive entity the Department of Energy's standard practice is to consult and make awareness of the project to users and community leaders at areas identified for potential project sites. Usually the Department of Environment is engaged to raise awareness on national environmental policies to community leaders, women and youth groups. Should there be detailed measures to reduce pollution and promote use of resources, then it will be determined during earlier engagement and consultations with the community.			
Community Health, Safety, and Security	YES	NO	TBD
Will the activities potentially generate risks and impacts to the health and safety of the affected communities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
It is assumed that all these Solar PV systems will be used responsibly and cared for in good faith to prolong its useful life.			
Will there be a need for an emergency preparedness and response plan that also outlines how the affected communities will be assisted in times of emergency?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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The Vanuatu Department of Energy will involve relevant authorities such as the Vanuatu National Disaster Management Office (NDMO), the Provincial/Local Area Councils and Community Disasters Committees (CDCs) to ensure that there are regular awareness and works on disaster preparedness and planning for project selected communities.			
Will there be risks posed by the security arrangements and potential conflicts at the project site to the workers and affected community?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
It is assumed, for community project selected sites that they will voluntary participate and provide their contributions as goodwill for the Project. For rural households, there should be no conflict as they are the owners of the Solar PV system as they will partially contribute towards the overall cost of system.			
<b>Land Acquisition and Involuntary Resettlement</b>	<b>YES</b>	<b>NO</b>	<b>TBD</b>
Will the activities likely involve land acquisition and/or physical or economic displacement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Land acquisition and displacement of household/communities is unlikely to occur since these Solar PV Systems are classified as Solar Home Systems which will be individual installed and not clustered, therefore no impact to land and people living near by it.			
<b>Biodiversity Conservation and Sustainable Management of Living Natural Resources</b>	<b>YES</b>	<b>NO</b>	<b>TBD</b>
Will the activities potentially introduce invasive alien species of flora and fauna affecting the biodiversity of the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Destruction of ecosystems are unlikely to occur since these Solar PV Systems are classified as Solar Home Systems which will be individual installed and not clustered, therefore no impact to natural vegetation.			
Will the activities have potential impacts on or be dependent on ecosystem services including production of living natural resources (eg. agriculture, animal husbandry, fisheries, forestry)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
It is assumed that no impact on ecosystem services on natural resources are unlikely to occur since these Solar PV Systems are classified as Solar Home Systems which will be individual installed and not clustered.			
<b>Indigenous Peoples</b>	<b>YES</b>	<b>NO</b>	<b>TBD</b>
Will the activities potentially have any indirect impacts on indigenous peoples, ethnic minorities, or vulnerable and marginalized groups?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
This will be determined throughout the project and as part of the Monitoring and Evaluation phase. The Department of Energy will carryout as part of systems verification and part subsidy payment for within 3 months of systems being sold/purchased to the end users a verification is done through phone and on site visitation when necessary. Should there be negative impacts as a direct result of the Solar PV System then the Department of Energy will be responsible to act quickly to setup mechanisms in place for proper usage and care of the systems.			
<b>Cultural Heritage</b>	<b>YES</b>	<b>NO</b>	<b>TBD</b>
Will the activities restrict access to the cultural heritage sites and properties?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
These Solar PV Systems will be located inside the communities and NOT in the field/bushes.			
Will there be a need to prepare a chance-find procedure in case of the discovery of cultural heritage assets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
N/A			

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Stakeholder engagement and grievance redress	Yes	NO	TBD
Will the activities include a continuing stakeholder engagement process and a grievance redress mechanism and integrated into the management/implementation plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Department of Energy already has a grievance process specific to its projects and programs. This allows rural households and communities to dialogue and raise complaints to the Director of the Department, and advice is given to customers. Since staff of the Department of Energy are always going to the islands, they usually consult and advise directly with community leaders and people raise their concerns during meetings and awareness.			

### Part C: Sign Off

**Sign-off:** *Specify the name and designation of the person responsible for the environmental and social screening and any other approvals as may be required in the accredited entity's own management system.*

[This will be confirmed once an AE has been selected by the Department of Energy]