Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 20-Jul-2016 | Report No: PIDISDSC19058

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Vanuatu	P160658		Rural Electrification Project Stage II (P160658)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
EAST ASIA AND PACIFIC	Jan 09, 2017	Mar 30, 2017	Energy & Extractives
Lending Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Ministry of Finance and Economic Management	Department of Energy, Ministry of Climate Change and Natural Disaster	

Financing (in USD Million)

Financing Source	Amount
Borrower	1.50
Strategic Climate Fund Grant	7.00
IDA Grant	4.00
Total Project Cost	**12.50**

Environmental Assessment Category	Concept Review Decision
B-Partial Assessment	Track I-The review did authorize the preparation to continue

Other Decision (as needed)

N/A

B. Introduction and Context

Country Context

The Republic of Vanuatu is an archipelago of 83 volcanic islands (65 of them inhabited) covering a total area of about 12,200 square kilometers, of which approximately a third is land. Vanuatu has a population of approximately 258,000 people evenly distributed among the six administrative provinces: Malampa, Penama, Sanma, Shefa, Tafea and Torba and residing in an estimated 50,740 households, of which about 12,470 households (25 percent) are located in urban areas and the remaining 38,270 (75 percent) are dispersed in rural areas.[1,2] Generally, rural households rely mainly on

home consumption (subsistence) and household enterprises based around the sale of agricultural products, handicrafts, and other goods produced in the home, while urban households in Vanuatu rely on wages and salaries from labor-based activities as their main source of income. Vanuatu has been assessed to be the world's most vulnerable country to natural disasters.

Sectoral and Institutional Context

Energy Sector Context: An estimated 30 percent of the Vanuatu households and public institutions have access to electricity via connections to a grid network. Only four islands benefit from a grid network; however, the share of those without access to electricity remains high: Efate (24 percent), Malekula (84 percent), Santo (65 percent), and Tanna (86 percent). There is also a severe imbalance in access between urban and rural areas; the population without access in rural areas ranges from 83-85 percent in Tafea and Shefa province, 89 percent in Sanma province, 92 percent in Malampa province and 97 percent in Torba province.

Of the 50,740 total households nationwide, an estimated 21,500 are in grid-concession areas or in adjacent areas feasible for grid-extension on Efate, Malekula, Santo or Tanna. The remaining 29,240 households are in areas termed "off-grid". There have been no past studies or data that would enable an accurate estimation of the size of the group that would benefit from micro- or mini-grid configurations. Approximately 30 percent of off-grid households are relatively concentrated and may be more likely to benefit from a micro or mini-grid configuration, powered by local resources, such as solar, hydro and other renewable energy technologies where available, diesel gensets, or hybrids of the two. In addition to the off-grid households, some 560 schools, health centres, dispensaries, post offices and aid stations provide vital services to poor and isolated communities. The remaining households are in dispersed off-grid areas that are located beyond the economic grid extension areas, and those that are too dispersed across the off-grids areas to be considered for isolated micro and mini-grid configurations. The Government of Vanuatu is working with the World Bank to implement the Rural Electrification Project Stage I to scale up access to electricity services through "plug and play" systems for approximately 17,500 rural households, and aid posts and community halls.

The rural population usually access electricity through the use of diesel generators or solar, however, some communities are supplied by small micro/mini-grid systems. The lower population density in rural areas, large distances between customers, lower electricity loads and high connection costs have meant that the extension or building of new electricity grids for supply to peri-urban and rural consumers remain uneconomic.

Institutional Context:

The Department of Energy (DoE), within the Ministry of Climate Change and Natural Disasters (MCCND), is responsible for rural electrification projects. DoE also plays a central role in coordinating energy sector development and policy. Other Government Ministries involved in the electricity sector include the Ministry of Infrastructure and Public Utilities (MIPU), which is responsible for all the public infrastructure of the government, and the Ministries of Education and Health, which have in the past been beneficiaries of solar energy packages for social institutions through other donors.

The Government of Vanuatu has made the development of the electricity sector a priority. The Vanuatu National Energy Roadmap (NERM), which was developed with support from the World Bank, lays the foundation for future

energy sector policy and investment in Vanuatu. The NERM was approved by the Council of Ministers on June 27, 2013, and launched by Government in April, 2014.

The NERM identifies five priority areas and targets for Vanuatu's energy sector, including: (a) Access to secure, reliable and affordable electricity for all citizens by 2030; (b) Petroleum Supply – reliable, secure and affordable petroleum supply throughout Vanuatu; (c) Affordability – lower cost energy services in Vanuatu; (d) Energy Security – an energy secure Vanuatu at all times; and (e) Climate Change – mitigating climate change through renewable energy and energy efficiency. This Project will contribute to increased access and affordability of electricity in rural Vanuatu.

In 2016 the DoE undertook an update of the NERM. The purpose of the update was to (i) update goals and targets of the NERM including Renewable Energy, Energy Access, Petroleum and Energy Efficiency; (ii) include details in the NERM on Energy Efficiency and Conservation objectives; (iii) incorporate green growth objectives and actions into the NERM that links energy to income generating activities in the productive sectors of the economy; and (iv) update the NERM investment and implementation plan.

The Scaling-up Renewable Energy Program (SREP) Investment Plan for Vanuatu was endorsed by the Council of Ministers and the SREP Sub-committee in 2014. The SREP Investment Plan put forward for consideration for funding through the Strategic Climate Fund two projects: (i) the proposed project to build on the World Bank supported Vanuatu Rural Electrification Project to include micro and mini-grids and (ii) investment in two small hydro projects through the Asian Development Bank to increase renewable energy in Vanuatu's electricity generation mix and also provide access to households and businesses who are currently not connected to the electricity grid.

Relationship to CPF

The development of Regional Partnership Framework is underway. This Project is consistent with the priorities set out under SCD for eight (8) Pacific Island Countries and directly supports the Government's Priority and Action Agenda (PAA) 2006-2015 which aims to: (a) reduce the cost of services; (b) extend the coverage of rural electrification; and (c) promote the use of renewable energy. It is consistent with Government of Vanuatu's current vision for a more diversified economy and more equitable social and economic development and the government of Vanuatu's objectives and targets for increasing access to secure, reliable and affordable electricity of its citizens under the NERM and set out in SREP IP 2014.

The Project will also contribute to global efforts to mitigate climate change by promoting the use of clean energy technologies, including the use of solar energy solutions in rural areas, to displace the current use of mainly kerosene for lighting and contribute to the World Banks twin goals of (i) eliminating extreme poverty and (ii) boosting shared prosperity.

C. Proposed Development Objective(s)

The Project Development Objective is to scale up access to modern electricity services for rural households, public

institutions and businesses using micro- and mini-grid configurations.

Key Results (From PCN)

Progress will be measured against the following results indicators:

- Generation Capacity of Renewable Energy (other than hydropower) constructed under the project (MW)
- People provided with access to electricity under the project by household connection – Mini-grid – Other renewable sources (number)
- Community electricity connections under the project – Mini-grid – Other renewable sources (number)

D. Concept Description

The proposed project, with an estimated cost of US$12.5 million, will include the following two components:

Component 1: Construction of micro and mini-grids in rural areas of Vanuatu (US$9.5 million – IDA US$4 million, SREP US$ 5.5 million). The Government of Vanuatu (GoV) will identify potential locations for micro and mini grids (long list) taking into account population density (number households), public facilities such as hospitals and schools, 'anchor' loads such as tourism facilities, food processing or other commercial operations, and potential sources of renewable energy sources, for example hydro, for feeding into the mini-grids in future. The potential for clustering of mini grids to achieve scale during construction and operations will also be taken into account. Although there are a range of potential micro and mini grid solutions, the initial design will be based on solar photovoltaics (PV) with or without storage with diesel backup. The installations will be modular, scalable with demand growth and will allow for other generation sources, such as small hydro, to be connected in future.

Communities in the long listed sites will be invited by the GoV to elect to receive a micro or mini grid under the project. Communities electing to receive micro or mini grids will provide access to community land for the siting of the generation installations and siting of the distribution network.

The Government of Vanuatu will appoint design and supervision consultants (in two phases - for project preparation and supervision) to (i) undertake feasibility studies to validate potential micro and mini grid sites and prepare designs for modular hybrid grid systems of different sizes and durations of operation, based on needs, and (ii) supervise the construction and commissioning works as owners' engineers once the sites have been selected following agreement with the communities.

The institutional models for the micro and mini grids will be further defined and developed during preparation stage. Community operated grids is not an option as these have failed in the Pacific due to lack of technical and commercial expertise. The options for this project will seek to leverage expertise and investment capacity of the private sector. The models under consideration include:

(a)Management contract – Under this model the GoV would enter into an incentive-based management contract with a private sector operator who will operate the grid to specified operational standards, achieve an agreed level of collections and be paid a fee of this service. The private sector participant may also construct the micro or mini grid. The GoV would own the assets and would finance the capital cost to develop the micro or mini grid.

(b)Concession – Under this model a private sector participant, through a competitive tender process to build, own, operate and maintain the micro and mini grid for a specified period of time. The GoV may partly "buy-down" the capital cost to develop the micro or mini grid or enter into arrangements that ensure a commercial rate of return for the private operator and at the same time ensure that the tariffs are affordable to consumers. Considerations may also include tariff equalization across the various electricity concessions in Vanuatu. This model could help leverage additional finance from the private sector thus increasing the number of areas that can be electrified.

The GoV is familiar with both models, with one of the four existing grids in Vanuatu operating under a management contract and the other three operating as concessions. The GoV may also consider arrangements with the existing service providers; UNELCO (concession agreement) and VUI (management contract) in Vanuatu for the development of the micro and mini grids. These services providers may be able to realize economies of scale leveraging off their existing business interests.

Component 2: Project management (US$ 3.0 million – SREP US$1.5 million; GoV US$1.5 million (in kind)). The project management costs will mainly be the cost of the owner's engineer whom will be responsible for the final design, procurement (bidding and contracts/concessions) for the construction and operations of the facilities, supervision of the construction and commissioning works, and preparation of the environmental impact assessments and environmental management plans, compliance and reporting. The "in kind" GoV contribution will cover the GoV's direct project related costs, community consultation and support to the owners' engineer on project implementation.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

Component 1 of the project involves construction of micro and mini grids in rural areas of Vanuatu. The Government of

Vanuatu (GoV) will identify potential locations for micro and mini grids (long list) taking into account population density (number households), public facilities such as hospitals and schools, 'anchor' loads such as tourism facilities, food processing or other commercial operations, and potential sources of renewable energy sources for feeding into the mini-grids in future. The potential for clustering of mini grids to achieve scale during construction and operations will also be taken into account. Although there are a range of potential micro and mini-grid solutions, the initial design will be based on solar photovoltaics (PV) with or without storage with diesel (biofuel capable). The installations will be modular, scalable with demand growth and will allow for other generation sources, such as micro/mini/small hydro, to be connected in future.

Communities in the long listed sites will be invited by the GoV to elect to receive a micro or mini-grid under the project. This is a demand driven initiative where communities elect to benefit from project outcomes and will be delivered in partnership with the communities. Accordingly, communities electing to receive micro or mini grids will provide access to community land (land donation) for the siting of the generation installations and siting of the distribution network and the Bank's consultation and documentation requirements for land donations will need to be satisfied to ensure all parties are actively involved and that no particular individuals experience an unequal burden on behalf of the community etc.

Micro and mini grids with reliable power supply are expected to yield economic, environmental and social benefits – better health, education, productivity, and overall improvement of the human development indicators in rural and peri-urban areas. The potential environment and social impacts are assessed based on the design, scope of work as well as the physical and biological environment of project site. Mitigation measures for each potential environment and social impacts are designed to avoid, minimize or remediate the impacts.

B. Borrower's Institutional Capacity for Safeguard Policies

The Department of Energy (DoE), the Implementing Agency, in the Ministry of Climate Change and Natural Disaster has some experience with World Bank Safeguard policies. The DoE is currently implementing three World Bank projects; (i) the Improved Electricity Access Project, (ii) The Vanuatu Rural Electrification Project Stage I, and (iii) the Energy Sector Development Project (Technical Assistance). The DoE has prepared necessary safeguards documents for the implementation of the investment projects. The DoE benefited from the Energy Sector Development Project in terms of capacity building and development of safeguards legislation and regulation. The project will prepare an ESMF to guide the handling of safeguards, and will supplement all the above with targeted training of both the client and beneficiaries in environmental and social management aspects.

C. Environmental and Social Safeguards Specialists on the Team

Penelope Ruth Ferguson, Ross James Butler

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	This safeguard policy is triggered. The project will involve siting of modular solar/battery/diesel hybrid systems, installation of

		solar panels, and construction of distribution lines on land donated by the communities. The installations will be carried out in remote communities. Solar panels will be installed either on roof tops of existing or new buildings or as ground mounted structures. There will relatively minor local environmental impacts during construction and the project will need to include considerations on the future disposal of batteries where used. Vanuatu is already implementing the Vanuatu Rural Electrification Project Stage I that is supported by an Environmental Code of Practice (ECOP) for battery disposal. Further, recently with the support of a World Bank Technical Assistance Project, the GoV has developed draft legislation for disposal of solid wastes, including batteries that is being considered by the State Law Office. To ensure compliance with both World Bank Safeguard policies and the environmental legislation of the Vanuatu, an Environmental and Social Safeguards Management Framework (ESMF) will be prepared to guide the screening of candidate projects, inform any environmental impact assessments and the development of environmental management plans. The ESMF will contain screening criteria for issues associated with successful candidate projects, mitigation measures, environmental monitoring, and capacity development requirements covering the pre-construction, construction and operational phases of the Project. If not superseded by legislation, the ESMF will be extended to include an ECOP for disposal of batteries.
Natural Habitats OP/BP 4.04	No	As the project sites will be implemented in already developed rural areas, including streets, roads and local communities, the Project would not cause any impacts on any critical natural habitats.
Forests OP/BP 4.36	No	The project activities are not expected to create or induce deforestation and their environmental impact is not expected to compromise the integrity and health of forested areas. Some minor clearings of trees, shrubs and undergrowth within urban areas may be necessary to extend the grids.
Pest Management OP 4.09	No	The Project will not involve use of pesticides or

		herbicides.
Physical Cultural Resources OP/BP 4.11	No	Physical cultural resources are not envisaged in the project area.
Indigenous Peoples OP/BP 4.10	No	Based on an assessment carried out in 2013 by OPCS, OP 4.10 indicates that all four defining characteristics should be present to trigger the Indigenous Peoples policy and these characteristics are not present in Vanuatu. Accordingly, the policy would not be triggered for the project. Given the strong community driven nature of the works in the electricity sector, extensive consultation and citizen engagement will be required to allow effective implementation. This would include engagement with all components of the communities.
Involuntary Resettlement OP/BP 4.12	Yes	This policy is triggered. Since the Project will rely on land donation by the communities, it is anticipated that any impacts on land will be minimal. All land related issues (e.g. for generation in the out stations) will be addressed either via a negotiated arrangement (willing buyer-willing seller or voluntary land donation etc.). There may however be a need to remove trees and other income producing vegetation/installation for technical reasons, which will be avoided to the maximum extent possible. An ESMF incorporating a Resettlement Policy Framework will be developed in accordance with the World Bank safeguard requirements.
Safety of Dams OP/BP 4.37	No	No dam will be affected by the project.
Projects on International Waterways OP/BP 7.50	No	No project activities will take place on international waterways.
Projects in Disputed Areas OP/BP 7.60	No	There are no known disputed areas in the project areas of influence.

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Mar 03, 2017

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

TBD

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APPROVAL

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