



**Government of Solomon Islands
Climate Investment Funds
Scaling-up Renewable Energy in Low-income countries
(SREP)**

Investment Plan for Solomon Islands

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Solomon Islands

SOLOMON ISLANDS

SCALE = 1:2 500 000
MERCATOR PROJECTION

-  National Capital
-  Provincial Capital
-  Commercial Airport



ALL HEIGHTS ARE IN FEET



Country Context

- 996 islands, 28,450 km², 800,000 km² of sea
- Pop. 515,870
- 80.3% rural, 19.7% urban
- target 50% Renewable Energy by 2020
- installed capacity 28 MW – 100% diesel
- 90% energy generated is in Honiara
- Low access rate - 21.2%
- High tariff US\$0.86/kWh domestic, US\$0.92¢/kWh commercial/industrial



Renewable Energy Context

- **Hydropower: good hydrology and year round river flows.**
- **Solar PV: Solar irradiation 5.5 to 6.5 kwh/m²/day. Potential for both grid-connected and distributed solar generation**
- **Biomass Gasification. Limited potential**
- **Biomass Direct Combustion. Limited potential**
- **Coconut Oil as diesel substitute. Significant potential due to excess coconuts.**
- **Biodiesel. High conversion costs barrier in short term**
- **Geothermal: Potential for Honiara**
- **Wind: Anticipated to be poor – monitoring ongoing**



Challenges



- **Diverse culture with different land tenure system**
- **Geographic nature of the islands**
- **Wide spread of islands and population**
- **High electricity cost**
- **High transportation cost especially sea transport**
- **Small economies, isolation from international market**



Energy Governance Framework

- Draft Energy Policy Framework, 2014
 - Renewable Energy Target 50% by 2020
- Draft Renewable Energy Investment Plan, 2014
- Energy Division, Ministry Mines, Energy and Rural Electrification (MMERE) - responsible for energy policy.
- Solomon Islands Electricity Authority (SIEA) - responsible for power supply and distribution



SREP INVESTMENT PLANS FOR SOLOMON ISLANDS

- SREP RESOURCES: US\$14 million
- IP components
 - Renewable Energy Mini grids
 - Grid connected solar power
 - Solar home systems
 - Technical assistance



Component 1 – Renewable Energy Mini-grids

- will increase productive use of energy by allowing reliable, safe, low cost and high quality electricity for productive activities during the evening, improved education, access to communication, small retail ventures, communal freezers to preserve fish and make ice, handicrafts manufacturing.
- estimated 60 mini-grids in rural villages -hydropower, biofuel (coconut oil) and solar PV.
- financing will utilize the Output Based Aid mode



Component 2 – Grid Extensions

- 1. grid extensions to Honiara and Auki grids after conversion to renewable energy**
- 2. financing through Output Based Aid (OBA)**
- 3. connecting 3,000 households, including hardware and installation costs of connecting households to the low voltage grid, prepayment meter and basic household wiring.**



Examples of productive use of renewable energy in Solomon Islands:

Micro-hydro power used for ice-making & cold storage of fish for shipment to market in main town.



Turbine/generator of 40kW micro-hydro plant





Solar water pumping from deep bore-hole for remote village



Energy Division
Ministry of Energy, Mines & Rural Electrification
Solomon Islands Government

CALIFORNIA VILLAGE SOLAR WATER PUMPING PROJECT

Funded Under the: Solomon Islands Government Rural Electrification Program

Equipment Supply,
System Design & Installation by: PIDGIN HOLDINGS LTD.



Component 3 – Enabling Environment

- development of improved processes for land acquisition for distribution extensions and mini-grids
- revised Electricity Act and Petroleum/Biofuels laws and regulations
- capacity development within SIEA
- capacity development within MMERE

Component 4 – Grid Connected Solar

- will benefit the economy through
 - reduced imports of fossil fuels
 - lower cost of power generation
 - improved energy security
 - reduced tariff volatility
 - reduces greenhouse gas emissions
- 2MW grid connected, utility scale PV
 - reduce the use of imported diesel fuel
 - help to lower the SIEA cost of generation
 - model for expanded PV

Component 5 – Upscaling Household Solar

- current system is unsustainable due to
 - limited private sector involvement
 - lack of standards for solar equipment
 - absence of battery recycling system
 - lack of trained technicians for maintenance,
 - lack of incentives to maintain free equipment
 - intermittent household incomes
 - remote population centers
- will trial private sector led fee-for-service model to install, own, operate and maintain 2,000 SHS for rural households.

Financing Plan

		Private	SREP	ADB	WB	Gov	Total
Preparation of Investment Proposal			0.6				0.6
Regional Component			1.0				1.0
Renewable Energy Access Project (WB)							
1.	Renewable Energy Mini-grids	3.0	5.2	-	2.5	2.0	12.7
2.	Grid Extensions	-	-	-	3.5	3.0	6.5
3.	Project Preparation	-	0.5	-	-	-	0.5
4.	Technical assistance	-	1.0	-	1.0	-	2.0
Solar Power Development Project (ADB)							
5.	Grid-connected solar power	-	3.7	4.5	-	1.5	9.7
6.	Household solar	1.0	1.0	1.0	-	1.0	4.0
7.	Project Preparation	-	1.0	-	-	-	1.0

Conclusion

- **Scaling up renewable energy for:**
 - **Opening more economic opportunities to the informal population**
 - **Build a resilient society through partnership to combat climate change**
 - **Graduate from LDC status**

Tangio Tumas

