

# CDM status in Solomon Islands

# Outline

- DNA set-up
- Potential CDM projects
- PoA
- Voluntary carbon market projects

# DNA

- DNA set up under ADB assistance June 2011.
- Permanent Secretary – Ministry of Environment, Climate Change, National Disaster Management & Meteorology
- Letter of communication sent to UNFCCC

# Potential CDM Project

## Tina River Hydropower scheme



Installed  
Capacity

14 MW

Energy  
Generation

56  
GWh/year

## Access to affordable electricity in the Solomon Islands (?)

Criteria	Units	Solomon Islands	Median*	S.I. rank* (out of 12)
<b><u>Access to electricity:</u></b>				
Access to electricity	% of all households	8%	89%	12
Electricity production (capacity)	kW per capita	0.02	0.25	12
Electricity production (actual)	KWh per capita	118	702	12
<b><u>Affordability of electricity:</u></b>				
Average end-user tariff (residential)	US cents/kWh	50.5	45.6	3
Average end-user tariff (commercial)	US cents/kWh	55.5	48.5	2

\* Cook Islands, FSM, Kiribati, Nauru, Niue, Palau, RMI, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu

Source: Pacific Infrastructure Performance Indicators, PRIF, 2011

# Tina River Hydropower Development Project

## Government Objectives & Project Aims

- Reduce dependency on importation of expensive diesel for the Solomon Islands Electricity Authority (SIEA)'s generators
- Utilize the abundant renewable hydro resources for cheaper generation and to put in place a significant sustainable source of energy which will last for more than 50 years
- Expected lower cost of generation will aim to reduce the cost of electricity to both retail and commercial consumers resulting in increased retail connections and a stimulus to growth.
- The development of Tina Hydro is expected to be a model for further renewable developments both on Guadalcanal and other areas of the Solomon Islands
- Encourage private sector participation to supplement the efforts of donor agencies.

# Potential CDM Project

## Tina River Hydropower scheme

Reservoir based small hydro power generation

The technical details are as below:

- Catchment size: 115 km<sup>2</sup>
- Gross head: 59 m
- Dam height: 48 m
- Reservoir Volume: 17,487,000 m<sup>3</sup>
- Operating Volume: 9,928,000 m<sup>3</sup>
- Capacity: 14 MW
- Design Flow: 28 m<sup>3</sup>/s
- Approximate total annual energy: 56,000 MWh
- Estimated length of headrace: 1.221 km
- Turbine type: Francis (2 no)

# Tina River Hydro scheme

- Phase 2 of the feasibility study involves:
  - Geotechnical investigations, including drilling,
  - Hydrological analysis,
  - Preparation of Terms of Reference (ToR) for Environmental Impact Assessment (EIA) as required under the Solomon Islands Environment Act (1998), and undertaking field studies required to support development of EIA ToR.
  - Detailed analysis and optimisation of the preferred development option, and
  - Preparation of General Specifications for construction of the Tina River Hydropower Development.
- Phase 2 of the study is nearing completion – final workshop to present results is scheduled to take place in Honiara 5-7 Dec 2011.



# Tina River Hydro

- The IPP implementing and operating the project is planned to be selected through publishing of a tender subsequent to completion of phase 2 study. The selected IPP will be one of the Project Participants
- **Location** : The project is located to the south-east of Honiara in Guadalcanal. The dam would be located at chainage 11.7km, with a powerhouse located near the “Pachuki” settlement at chainage 12.9km.
- Estimated project life-time for the BOOT is 30 years
- Carbon emission - est. 440,000 tCO<sub>2</sub> for 10 years period.

# Marketing: Overview

- Marketing Activities carried out include thus far include:-
  - ✓ Teaser or project brief and sent to over 50 developers, from Australia, New Zealand, Japan, India and Sri Lanka
  - ✓ IFC has contacted over 30 of the target list and met with potential developers in New Zealand
  - ✓ Adequate interest from medium to small size developers and contractors to submit an Expression of Interest
  - ✓ All developers and investors await FS, site details and wish to understand the country better

# Project pipe-line Mini-hydro projects for SIEA out-stations

- ▶ Pre-feasibility Studies undertaken under ADB RETA 7329

▶ <u>Project</u>	<u>kW installed</u>	<u>kWh p.a</u>
▶ AUKI	1,160	9,800,000
▶ RINGGI	4,320	26,300,000
▶ LATA	107	800,000
▶ TARO	260	2,100,000

# GHG EMISSIONS REDUCTION POTENTIAL

• Project	Plant factor	t Co <sub>2</sub> p.a
• AUKI	0.6	4,536
• RINGGI	0.7	14,202
• LATA	0.5	309
• TARO	0.5	810

# Financial Analysis

<u>Project</u>	<u>Investment US\$</u>	<u>FIRR</u>
• AUKI	\$4,178,000	35%
• RINGGI	\$11,289,000	47%
• LATA	\$2,169,000	13%
• TARO	\$1,697,000	18%

# Barriers

- Landowners consent/land acquisition
- Lack of capital
- Lack of project preparation funds

# Potential PoA projects

- 1. Carbon Abatement via Solar Home Systems in Rural Areas.
  - Micro-credit scheme
  - 2000 households
  - Emission reduction 536 tons of CO<sub>2</sub> by 2015 (assuming 3 years operation)
- 2. Solar Electrification of rural boarding schools & rural health centres
- 3. REDD+
- 4. Energy Efficiency
- 5. Methane capture – e.g palm oil waste effluent.



THANK YOU