PROJECT IDEA NOTE (PIN)

Name of Project: PoA for Promotion of Small Hydro Power in Solomon Islands

Date submitted: 28 June 2012

Description of size and quality expected of a PIN

Basically a PIN will consist of approximately 5-10 pages providing indicative information on:

- the type and size of the program
- its location
- the anticipated total amount of GHG reduction compared to the "business-as-usual" scenario (which will be elaborated in the baseline later on at PoA DD and CPA DD level)
- Duration of the program and crediting period of the CPAs under the Program
- the estimated CER price in US$/ton CO_2e reduced
- the financial structuring (indicating which parties are expected to provide the project's financing)
- the project's other socio-economic and environmental effects/benefits

While every effort should be made to provide as complete and extensive information as possible, it is recognised that full information on every item listed in the template will not be available at all times for every project.

A. Program Description, Type, Boundary and Schedule

<table>
<tr>
<td>Objective of the Program
(Describe the policy/measure or stated goal that the PoA seeks to promote)</td>
<td>In the Solomon islands electricity is supplied to less than 20% of the population. Almost all generation is based on imported diesel fuel. Apart from this high dependence on external supply, the country also faces challenges in the development of the energy sector, including maintaining reliability, ensuring commercial viability of the power utility Solomon Island Electricity Authority (SIEA), and increasing access to modern energy supply.

The objective of the program is to develop alternative energy resources for electricity generation in particular small scale hydropower for the out stations of SIEA. At least 5 viable small hydro projects in Solomon Islands have been identified to be a part of this program.</td>
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<tr>
<td>Program Description and Proposed Activities
(About ½ page)</td>
<td>Numerous studies and investigations on hydropower carried out in Solomon Islands have concluded that the country is well endowed with hydropower resources, which is more than enough to meet the current electricity demand in the country. Most of Solomon Islands' catchment receives consistent and evenly distributed rainfall in the range of 3,000 mm or more per annum. The country has a mountainous terrain. There are hundreds of river with steep enough stream gradients to allow harnessing hydropower on most inhabited islands.

During the pre-feasibility study, 5 sites have been investigated as potential sites for mini hydropower project development to provide access to affordable electricity to rural areas. These five sites have been selected on basis of consultation with the Ministry of Mines, Energy and Rural Electrification (MMER) and SIEA. The details are as in the table below:

<table>
<tr><th>Load Center</th><th>Capacity kW</th><th>Annual GWh</th><th>Investment ($ millions)</th><th>Expected Commissioning</th></tr>
<tr><td>Auki</td><td>1,160</td><td>9.8</td><td>4.2</td><td>2014</td></tr>
<tr><td>Taro</td><td>260</td><td>2.1</td><td>1.7</td><td>2014</td></tr>
<tr><td>Ringi
Variant A
Variant B</td><td>
1,210
4,320</td><td>
10.4
26.3</td><td>
4.4
11.3</td><td>
2013
2014</td></tr>
<tr><td>Lata</td><td>107</td><td>0.8</td><td>2.2</td><td>2014</td></tr>
<tr><td>Honiara</td><td>2,740</td><td>12.7</td><td>7.2</td><td>2014</td></tr>
</table>

On site studies were conducted at above sites, including broad stakeholder consultation, surveys of power supply infrastructure, assessment of existing hydropower resources through GPS surveys and discharge measurements, demand surveys of both existing and potential new SIEA customers and specific community consultations and individual interviews on relevant subjects such as pre-payment metering systems, support for data collections (level and rainfall gauging stations), and possible community participations in hydropower development and power system expansion projects.</td>
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</table>

	Solomon Islands Electricity Authority (SIEA) expects to develop the above projects by private Independent Power Producer IPP investors to overcome landowners issue and shortage of investment funds. However this would require a framework that is able to balance interests of investors, consumers and the electricity buyer SIEA.
Technology to be Employed *(Describe in not more than 5 lines)*	The projects are small run-of-river based hydro power projects with minimum technical complexity. The detailed technical characteristics will differ across CPAs and be described in the corresponding CPA-DDs
Type of Program	
Greenhouse gases targeted $CO_2/CH_4/N_2O$/HFCs/PFCs/SF_6 *(mention what is applicable)*	CO_2
Boundary of the Program	
The boundary for the PoA in terms of a geographical area	Pan Solomon Islands
Duration of the Program	
Starting Date	2013
Duration/Length	28 years
Program Coordinating/managing Entity	
Name of the Coordinating Entity	Solomon Islands Electricity Authority under Ministry of Energy, Mines and Rural Electrification
Confirm that the program is a voluntary action by the coordinating/managing entity	Yes program is a voluntary action by SIEA and is not required by law in the host country.
Organizational category (private entity or public entity)	Government Organization
Summary of the relevant experience and capability of the Coordinating Entity (*Describe in not more than 5 lines)*	Not Applicable as Government Entity
Operational /management arrangements	
Operational and management arrangements between the coordinating entity and the participating organisations	The Coordinating/Managing Entity (CME) will work closely with project developers and other organizations active in the renewable energy sector in Solomon Islands to facilitate the development of hydro power potential and their inclusion in this PoA to avail CDM benefits. The CME will establish and maintain an electronic database that contains information of all the CPA's in the Programme. Details of the operation and management plan are as follows: The CME will maintain a database with the following information per CPA subscribing to the PoA: • Name of the CPA • Implementing entity of the CPA • Technical Specifications of the CPA • Location of the CPA (GPS coordinates) The roles and responsibilities of the CME and other organizations (including project developers) will be elaborated for each CPA at CPA-DD stage. The CME will enter into contractual arrangement with the CPA implementers with respect to various costs that will be incurred during Programme/project implementation as well CER revenue sharing.

Expected Schedule	
Earliest Program starting date *Month/Year in which PoA will be operational*	2013
Expected first year of CER delivery	2015
Lifetime of the CPAs *Number of years*	30 years
For CPAs: Expected Crediting Period *7 years twice renewable or 10 years fixed*	7 years twice renewable (crediting period for all CPAs ends after 28 years of PoA registration)

B. Methodology and Additionality of the Programme of Activities

Sector Background Please describe the laws, regulations, policies and strategies of the Host Country that are of central relevance to the proposed project, as well as any other major trends in the relevant sector (e.g. any law/regulation on waste disposal or renewable energy targets)	The price of electricity in Solomon Islands remains one of the highest in the Pacific region at around 50 US cents/kWh. The Solomon Islands Electricity Authority (SIEA) faces numerous challenges in providing reliable, sustained electricity at a reasonable cost, including rising oil prices, accumulated arrears, and unevenly maintained generation and network infrastructure leading to frequent power cuts across towns served by the SIEA. Access to reasonably priced, reliable energy is a vital element of growth and, as such, this must be addressed. The diesel-fired generators that supply nearly all of the country's electricity are a major contributor of fossil fuel imports, accounting for around 30 percent of Solomon Islands' total imports—affecting the nation's balance of payments situation. The poor performance of the power industry also presents a major constraint to private sector development and economic growth. Rural electrification coverage in the Solomon Islands is particularly limited. With few exceptions, electrification is confined to Honiara and the provincial centres. Outside of these centres, only about 5% of the rural population has access to electricity through a small number of off-grid and individual household systems. To develop the economic potential of villages and to provide social infrastructure to rural populations, greater emphasis on rural electrification is needed. However, a scaling-up of rural electrification services through expansion of existing grids and stand-alone systems is a substantial challenge. Though lack of funding is perhaps the dominant constraint, weaknesses in policy, legislation, regulation and the lack of feasible models that would allow the development of local, renewable energy resources also play their part in limiting the rate at which access to electricity services is improved for rural communities. The proposed programme is not required by any regulation in Solomon Islands.

	The main laws and regulation relevant to the hydro power sector are • Electricity Act (1969) related to tariff regulations for licensed electricity suppliers • Foreign Investment Act (2005) which helps create business environment for foreign investment in Solomon Islands. • Environment Act 1998 which was gazetted in Sept 2003 relates to EIA requirement for various projects. • Rivers Water Act (1968)/Water Resources Bill (2001) which recognizes
Description of a typical CPA (activities and measures to be covered, e.g. a MSW site or multiple MSW sites in a city)	A typical CPA under the programme will consist of run-of-river hydropower projects in Solomon Islands.
Eligibility criteria for CPAs (Define the eligibility criteria for inclusion of a project activity as a CPA under the PoA, which shall include, as appropriate, criteria for demonstration of additionality of the CPA, and the type and/or extent of information that shall be provided by each CPA in order to ensure its eligibility)	The eligibility criteria for inclusion of a project as a CPA under the PoA are : • Be a run-of-river hydropower plant generating electricity. • Comply with all eligibility requirements defined in applicable methodology • Not a capacity addition / retrofit replacement activity at an existing hydropower plant. • Export the renewable electricity generated to the relevant and clearly identified grid within the Geographical boundary of Solomon Islands • Have a cooperation agreement with SIEA for participation in the PoA • Not result in the construction of new reservoirs or in an increase in the capacity of existing reservoirs where the power density of the power plant is less than 4 W/m^2. • Should not be a de bundled component of an existing large scale methodology
Methodology (to be applied by all the CPAs)	The projects under this programme fall under the scope of following methodology *Type:* I. Renewable energy projects *Category:* I.D[1] – Grid connected renewable electricity generation (I.D./Version 17,EB 61) Scope Number: 1 Or *Category:* I.F[2] – Renewable electricity generation for captive use and mini-grid (Version 02/EB61) AMS I.F will be used in case the CPA :

[1] http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X

[2] http://cdm.unfccc.int/filestorage/4/1/J/41JF08WD9MSEB5YLHTZ6KVAPUC7XNQ/EB61_repan18_Revision_%20AMS-I.F_ver02.pdf?t=cGJ8bTI5MGJkfDDQFZQOrj20lvbehi1G-28x

	a) Displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid). b) Supplies electricity to a mini grid system where in the baseline all generators use exclusively fuel oil and/or diesel fuel AMS I.D will be used in case the CPA: a) Supplies electricity to a national/regional grid b) Supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling) The scenario mentioned for AMS I.D are not applicable currently, however it may become reality over the lifetime of PoA.
Baseline Scenario PoAs must result in GHG emissions being lower than "business-as-usual" in the Host Country. At the PIN stage questions to be answered are at least: • Which emissions are being reduced by the proposed PoA? • What would the future look like without the proposed PoA? *(About ¼ - ½ page)*	CO_2 is the targeted emission reductions by the project activity. In the absence of this program the baseline scenario would be continued usage of diesel based electricity generation with very high operational costs due to high costs of diesel.
Additionality Please demonstrate that in the absence of the CDM either: (i) the proposed voluntary measure would not be implemented, or (ii) the mandatory policy/regulation would be systematically not enforced and that non-compliance with those requirements is widespread in the country/region, or (iii) that the PoA will lead to a greater level of enforcement of the existing mandatory policy /regulation. This shall constitute the demonstration of additionality of the PoA as a whole;	The project additionally will be demonstrated as per "Guidelines for demonstrating additionally of Micro-scale project activities" EB 63 (version 03)**".** As per the paragraph 2 of the guidelines: Project activities up to 5 megawatts that employ renewable energy technology are additional if any one of the below conditions are satisfied: a) The geographic location of the project activity is in LDCs/SIDs or in a special underdeveloped zone of the host country identified by the Government before 28 May 2010; b) The project activity is an off grid activity supplying energy to households/communities (less than 12 hours grid availability per 24 hours day is also considered as .off grid. for this assessment); c) The project activity is designed for distributed energy generation (not connected to a national or regional grid) with both conditions (i) and (ii) satisfied; (i) Each of the independent subsystem/measure in the project activity is smaller than or equal to 1500 kW electrical installed capacity;

	(ii) End users of the subsystem or measure are households/communities/ SMEs. d) The project activity employs specific renewable energy technologies/measures recommended by the host country DNA and approved by the Board to be additional in the host country (conditions apply: The total installed capacity of technology/measure contributes less than or equal to 5% to national annual electricity generation). According to the United Nations, Solomon Islands is classified both as a Least Developed Country (LDC) and Small Island Developing State (SIDS)[3]. All the CPAs under this program are having installed capacity less than 5 MW and hence considered to be automatically additional as per the above EB guidelines and further demonstration of the additionality with investment analysis or barrier analysis or both is deemed not necessary. In addition, potential faces barrier in terms of technological barriers (availability of skilled labour, capacity for O&M etc) can also be explored..

C. Real Case CPA - Description, Type, Boundary and Schedule

Title of the CPA	Mataniko Hydropower Project, Honiara
Description of the CPA *(Describe in not more than 5 lines)*	Mataniko Hydropower project is a 2.74 MW run-of-river hydropower project to be built on Mataniko river which discharges near central Honiara. The project will involve construction of powerhouse 3km from the coastline and about 500 m outside the town boundary.
Greenhouse gases targeted $CO_2/CH_4/N_2O$/HFCs/PFCs/SF_6 *(mention what is applicable)*	CO_2
Boundary of the CPA	
The boundary for the CPA in terms of a geographical area	Mataniko Hydropower Station, Honiara
Crediting Period of the CPA	
Starting Date	2014
Duration/Length	30 years
Entity/individual responsible for the CPA	
Name	Solomon Islands Electricity Authority under Ministry of Energy, Mines and Rural Electrification
Role of the Entity/individual	Coordinating and Managing Entity
Organizational category	Government Organization
Eligibility of the CPA (Justify why the CPA is eligible to be covered under the PoA)	The CPA is eligible under the proposed PoA because: • Project Activity is a run off hydropower plant generating electricity. • Project Activity meets all eligibility requirements defined in applicable methodology AMS I.F • Project Activity is a green field project and not a capacity addition / retrofit replacement activity at an existing hydropower plant.

[3] http://www.un.org/special-rep/ohrlls/sid/list.htm

	• Project activity will export the renewable electricity generated to the mini grid within the Geographical boundary of Solomon Islands • Independent Power Producer (IPP) implementing the project will have a cooperation agreement with SIEA for participation in the PoA. • Project activity is a greenfield project and will not result in the construction of new reservoirs or in an increase in the capacity of existing reservoirs. • The project activity is not a de bundled component of a large scale methodology.
Baseline & Additionality Please demonstrate that in the absence of the CDM, the proposed CPA will not be implemented.	In the absence of this CPA the baseline scenario would be continued usage of diesel gensets for equivalent electricity generation. The CPA meets the guidelines for additonality for Micro Scale Project Activities.
Expected Schedule	
Earliest CPA starting date *Month/Year in which the plant/project activity will be operational*	2014
Estimate of GHG Abated/ CO_2 Sequestered *In metric tons of CO_2-equivalent, please attach calculations*	Annual (if varies annually, provide schedule): 10,160 tCO_2-equivalent Up to and including 2012: NA tCO_2-equivalent Up to a period of 10 years: NA tCO_2-equivalent Up to a period of 7 years: 71,120 tCO_2-equivalent
No double-counting Confirm that the CPA is neither included in any other PoA nor registered as a CDM project	At present there is no PoA registered in Solomon Islands. Hence the CPA will not involve double-counting of emission reductions.

D. Finance

D1. Finance at PoA Level

Total Cost Estimate	
Subsidies/incentives to the CPAs (if any)	N/A US$ million (Feasibility studies, resource studies, etc.)
Total Costs	Based on the pre-feasibility study initial cost estimates for the identified projects under the programme is US $19.7 - 26.6 million
Sources of Finance to Be Sought or Already Identified	
Public Funding and ODA (In case public funding is used a confirmation that official development assistance is not being diverted to the implementation of the PoA)	No ODA is involved in this PoA

D2. Finance of the Real Case CPA

Total Estimated Costs	
Capital investment	7.2 million USD

Management/coordinating costs	Not Available
Operational costs	Not Available
Other costs	Covered in Capital Investment
Sources of Funding	
Support from Coordinating/managing entity	Not decided yet
Equity	Government of Solomon Islands
Long-term debt	Asian Development Bank
Carbon finance (confirmed or estimated CER sales revenue, price per CER)	Not decided yet
Public fund (indicate whether public fund is used for the CPA or not. If yes, confirm whether any Official Development Assistance has been diverted for the implementation of this CPA	No ODA is involved in this PoA

E. Expected Environmental and Social Benefits (In Programmes of Activities CDM, Environmental Analysis can be conducted at PoA level or CPA level, subject to decision by the Coordinating/managing entity and the national regulations

The proposed programme is consistent with environmental strategy and priorities of the host country.

The Environment Act (1998) and associated Regulations determine the environmental impact assessment and approvals process in the Solomon Islands.

All the projects under this programme are categorized as a prescribed development under the Second Schedule of the Solomon Islands Environment Act (1998) and as such will be subject to compliance with the Act and the supporting Environment Regulations (2008).

The Environment Regulations (the Regulations) 2008 have been developed to assist in the preparation of EIAs. Compliance with the Regulations is a legislative requirement under section 55 of the Environment Act. The Regulations are supported by the Solomon Islands Environmental Impact Assessment Guidelines (Ministry of Environment, Conservation and Meteorology (MECM), April 2010).

In order to comply with the EIA process a Screening Report and a Scoping Report must be submitted to the MECDM Environment and Conservation Division (ECD) as the consent authority.

As per the screening report, a detailed EIA for the project activity will be carried out in accordance with the national regulations. Different effects on the environment could occur during construction and operation phases of the project. Construction related effects are primarily erosion, and sediment and other contaminant-laden discharges to the water ways, affecting water quality. The environmental impacts of a typical project related to construction activities may include: water pollution; air and noise pollution; There may be some impacts on the local populations during construction stage. Appropriate mitigation measures is planned to be developed through the EIA and the Construction Environmental Management Plan

(CEMP). During operation project activity may have some impact on river habitat, sediment transport, water quality and riparian groundwater levels. These effects will be studied in the EIA to be carried out for this project but no serious negative impacts are envisaged in the project activity.

Social Benefits: Following Social benefits are foreseen:

- Reduced annual cost of power generation per MW. Electricity in the Solomon Islands is produced using costly to run and highly polluting diesel generators. Hydropower will offset a proportion of the diesel currently used, and so reduce the overall cost of generation.
- Jobs, training and income generation during construction and operation through direct employment.
- Income generation through monetised compensation payments.
- Compensatory benefit through improved services and infrastructure and support of livelihoods programmes. Benefit sharing schemes may provide the best opportunity to provide a positive impact to the entire community including vulnerable groups.
- Access to electricity.
- Access to piped water.
- Income generation opportunities generated from increased human activity in the area.
- Overall poverty reduction and improvement in living standards.