

Technical Cooperation Abstract

I. Basic project data

<ul style="list-style-type: none"> ▪ Country/Region: ▪ TC Name: 	<p>Barbados/CCB</p> <p>Continuation of Support for the Sustainable Energy Framework for Barbados (SEFB) and Development of new technologies: Smart Grids and Deployment of Renewable Energy</p>
<ul style="list-style-type: none"> ▪ TC Number: 	<p>BA-T1028</p> <p>BA-T1034</p>
<ul style="list-style-type: none"> ▪ Team Leader/Members: 	<p>Christiaan Gischler (INE/ENE) Team Leader; Kamchan Kang (ENE/ENE) Alternate Team Leader; Adriana Valencia (INE/ENE); Camila Gonzalez (INE/ENE); Emiliano Detta (INE/CCS); Sandra Enriquez (INE/CCS); Maria Netto (IFD/CMF); Ana Maria Vidaurre (SCF/INF); Liliana Lopez (INE/ENE); Rochelle Franklin (CCB/CBA); and Christel Saab (CCB/CBA)</p>
<ul style="list-style-type: none"> ▪ Operational Support, Client Support, or Research & Dissemination. 	<p>(OS) Operational Support</p>
<ul style="list-style-type: none"> ▪ Date of TC Abstract: 	<p>October 2014</p>
<ul style="list-style-type: none"> ▪ Beneficiary (countries/entities which are the recipient of the technical assistance): 	<p>Government of Barbados (GOBA)</p>
<ul style="list-style-type: none"> ▪ Executing Agency and contact name 	<p>Inter-American Development Bank (IDB), through the Energy Division (INE/ENE)</p>
<ul style="list-style-type: none"> ▪ IDB Funding Requested: 	<p>US\$ 650,000</p> <p>US\$ 300,000</p>
<ul style="list-style-type: none"> ▪ Local counterpart funding, if any: 	<p>US\$ 250,000</p>
<ul style="list-style-type: none"> ▪ Disbursement period (incl. execution): 	<p>24 months.</p>
<ul style="list-style-type: none"> ▪ Required start date: 	<p>December 2014</p>
<ul style="list-style-type: none"> ▪ Types of consultants (firm or individual consultants): 	<p>International consulting firm and individual consultants</p>
<ul style="list-style-type: none"> ▪ Prepared by Unit: 	<p>INE/ENE</p>
<ul style="list-style-type: none"> ▪ Unit of Disbursement Responsibility: 	<p>IDB Headquarters</p>
<ul style="list-style-type: none"> ▪ Included in Country Strategy (y/n); 	<p>Yes. Energy is part of the current priority areas.</p>
<ul style="list-style-type: none"> ▪ TC included in CPD (y/n): 	<p>n/a.</p>
<ul style="list-style-type: none"> ▪ GCI-9 Sector Priority: 	<p>Contributes to: (i) assisting borrowers in dealing with climate change; (ii) regional integration; and (iii) supporting development in small and vulnerable countries.</p>

II. Objective and Justification

- 2.1 The objective of this TC is to provide continued support for the Sustainable Energy Framework for Barbados (SEFB), and for the development of new technologies, such as Smart Grids and other sustainable energy technologies, that can further contribute to achieving goals sought by the SEFB. Namely, promoting Renewable Energy (RE), both at utility-scale and distributed generation, Energy Efficiency (EE), and Energy Conservation (EC) in order to reduce Barbados' fossil fuel dependency.

- 2.2 The **specific objectives** are: to (i) support further implementation of SEFB along with the policy and legislation to promote RE and EE; (ii) prepare technical studies that will contribute to the promotion of RE, EE, and EC and serve as input for the preparation energy sector operations in Barbados; (iii) implement the impact evaluation of the SEFB Program; (iv) design financial instruments to promote large scale deployment of RE and EE projects; and (v) study and design a Smart Grid deployment project with renewable energy resources and grid energy storage, while analyzing its financial cost and benefit.
- 2.3 Since 2009, the Inter-American Development Bank (IDB) has supported the Government of Barbados (GOBA) in the implementation of the SEFB, through a package of policy-based lending, technical assistance programs, and investment grants. Additionally, investments loans such as the Energy Smart Fund (BA-L1020) which helps small businesses acquire state-of-the-art RE and EE equipment and the Public Sector Smart Energy (PSSE) (BA-L1025) program which aims at replacing all street lights with energy-saving lamps and retrofitting government buildings in Barbados, are also a fundamental part of the SEFB.
- 2.4 IDB's technical assistance has provided support for institutional strengthening, capacity building and public awareness programs. It is expected that with the several energy sector programs of the IDB in Barbados (largely encompassed within the SEFB), the country can reduce its oil imports by 30 percent (%), generate a net benefit of US\$283.5 million in electricity cost savings (5% of the country's GDP), and reduce monthly electricity bills by 15% to 20%.¹
- 2.5 IDB's Energy Division (INE/ENE) carried out a mission in Barbados on June 2014 during which a workshop was held for preparing a Nationally Appropriate Mitigation Action (NAMA) for the Energy Sector of Barbados. In discussing current and potential energy sector projects in the framework of this workshop, officials from the Division of Energy and Telecommunications (ETD) expressed special interest in developing: a) **EE projects for the hotel sector** as well as b) **introduction of RE and EE in public companies to make their processes more efficient**.
- 2.6 The TC is aligned with **IDB's institutional priorities**, as outlined in the Ninth General Capital Increase in Resources for the IDB Report (GCI-9, AB-2764) as it contributes to the goals of supporting: (i) micro, small and medium enterprises, through enhancing access to credit; and (ii) climate change initiatives, RE and the environment. Also, it is in line with the Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (GN-2609-1). The TC is aligned as well with the Barbados current country strategy and the future country strategy where energy is a prioritized sector within the strategy.

III. Description of activities and outputs

- 3.1 **Component I. Support to the SEFB Program.** Component I will finance consultancy services to: (i) support the ETD in the drafting, preparation, revision and dissemination of RE and EE policy and legislation documents; (ii) perform the technical studies required for the purpose of developing policy and regulation including the development of a grid penetration study with the purpose of increasing the share of RE in the grid; (iii) support the preparation of specific potential Bank operations in Barbados including: (a) the possibility of developing second phase of the Energy Smart Fund with an emphasis on **EE for the hotel sector**; and (b) an initiative to **utilize RE (wind, solar photovoltaic technologies, others) in public companies** to make their processes more efficient; (iv) the development of a grid penetration study in order for the GOBA to increase the share of intermittent renewable energy that can be integrated into the electricity grid in Barbados; (v) support in research and development efforts geared towards gaining a better understanding of cutting edge technologies such as energy storage, EE in thermal energy, and ocean power among others; (vi) complete and validate the Nationally Appropriate Mitigation

¹ Long-term results have been assessed with the SEFB Cost-Benefit Analysis, financed with ATN/OC-11473-BA.

Action (NAMA) at the United Nations Framework Convention for Climate Change (UNFCCC); (vii) assess and explore options for the GOB to foster private sector investments in RE and EE that could be financed through commercial bank finance and Bank group NSG windows; (viii) support the execution of RE and EE projects under ongoing IDB programs (Smart Fund and PSSE) assessing lessons learned, risks and barriers, and the needed efforts to support the deployment of utility scale RE and EE projects; and (ix) design the SEFB impact evaluation, and perform the baseline studies necessary to start the impact evaluation.

- 3.2 **Component II. Feasibility study of Smart grid deployment.** This Component will finance the development of a strategy for adopting a smart grid (SG) system that is suitable for local conditions in Barbados. It will finance: (i) identification of the best SG practices in countries with conditions similar to Barbados; (ii) technical evaluation of suitable SG models and identification of best options; (iii) developing a proposal for SG and infrastructure in Barbados, including the Smart Grid Program (SGP) and Advanced Metering Infrastructure (AMI). The SGP would also include an assessment Grid Energy storage integrated with RE as well as the inclusion of charging infrastructure for electric vehicles; and (iv) financial and economic analysis of the SGP.
- 3.3 **Component III. Capacity Building, Institutional Strengthening and Public Awareness.** This component will continue the capacity building, institutional strengthening and public awareness program under SEFB. It will finance training sessions, publications, web based products for dissemination, workshops, public relations campaigns and a high level RE and EE investment conference.

IV. Indicative Budget (in US\$ Dollars)

Activity/ Component	Description	IDB/Fund Funding		Local counterpart (in-kind)	Total Funding
		IDB	KPK		
Component I	Support to the SEFB Program	200,000	180,000		380,000
Component II	Smart grid feasibility study		390,000		390,000
Component III	Capacity Building, Institutional Strengthening and Public Awareness	40,000	40,000	250,000	330,000
Project Management		50,000	30,000		80,000
Contingencies		10,000	10,000		20,000
Total		300,000	650,000	250,000	1,200,000

V. Executing agency and execution structure

- 5.1 The Executing Agency of the TC will be the IDB, through the IDB Energy Division (INE/ENE) in coordination with IDB Country Office in Barbados and the GOBA. A Project Coordinator will be hired to support the ETD in the execution of the SEFB and coordinate GOBA's supervision of the products of this TC.

VI. Project Risks and issues

- 6.1 Risks include the fact that the ETD is short-staffed and as such requires additional help. This will be mitigated by the hiring of a Project Coordinator.

VII. Environmental and Social Classification

- 7.1 There are no envisioned environmental or social risks associated with the TC. A "C classification" is expected.

Approved:



Ariel R. Yopez, Energy Division Chief (INE/ENE)

Date:

