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REGIONAL

SUSTAINABLE ENERGY FACILITY (SEF) FOR THE EASTERN CARIBBEAN

(RG-L1071)

PROJECT PROFILE

The project team consisting of prepared this document: Christiaan Gischler (INE/ENE) Team leader; Maria Florencia Attademo (IFD/CMF) Co-Team Leader; Adriana Valencia (INE/ENE); Emilio Sawada (INE/CUR); Shohei Tada (INE/ENE); Camila Gonzalez (INE/ENE); Letizia Sosa (INE/ENE); Jaiwattie Anganu (CMF/CJA); Claudio Alatorre (INE/CCS); Christoph Tagwerker (INE/CCS); Betina Hennig (LEG/SGO); Colin McKee (VPS/ESG); Genevieve Beaulac (VPS/ESG); Jacob Paul Veverka (INE/TSP); Seth Stevens Colby (VPP/VPP); Sebastian Miller (RES/RES); Lesley Cassar (CCB/CCB); Christel Saab (CCB/CBA); Denise Salabie (FMP/CBA); Roy Parahoo (FMP/CBA); and Rochelle Franklin (CCB/CBA).

PROJECT PROFILE

REGIONAL

I. BASIC DATA

Project Name:	Sustainable Energy Facility (SEF) for the Eastern Caribbean	
Project Number:	RG-L1071	
Project Team:	Christiaan Gischler (INE/ENE) Team leader and Maria Florencia Attademo (IFD/CMF) Co-Team Leader. Complete Project Team is detailed in Annex V	
Borrower:	Caribbean Development Bank (CDB)	
Executing Agency:	Caribbean Development Bank (CDB)	
Financial Plan:	IDB - OC:	US$20,000,000
	IDB - CTF[1]:	US$20,000,000
	Local counterpart (CDB):	US$10,000,000
	Total:	US$50,000,000
	Parallel financing[2]:	US$20,000,000
Safeguards:	Policies triggered: B.13	Classification: Not required

II. GENERAL JUSTIFICATION AND OBJECTIVES

A. Justification

2.1 The independent Eastern Caribbean (EC) countries, Antigua and Barbuda (A&B), Dominica (DOM), Grenada (GRE), Saint Kitts and Nevis (SKN), Saint Lucia (SL), and Saint Vincent and the Grenadines (SVG), are six island states with small and isolated electricity markets. The fact that these countries lack the scale necessary to import cheaper fossil fuels, such as natural gas, and have not yet fully developed their renewable energy endowments, makes them dependent on costly imported liquid fossil fuels for electricity generation and results in high electricity costs. Governments in the region have limited capacity to take additional debt[3] and face fiscal constraints partly due to fossil fuel import bills. As presented in Table 1, oil imports as a percentage of

[1] The Clean Technology Fund (CTF) was designed in 2008 by a group of developed and developing countries, with the aim of promoting scaled-up financing for demonstration, deployment and transfer of low carbon technologies with a significant potential for long-term greenhouse gas emissions savings. The World Bank (WB) is the Trustee of the CTF and hosts its Administrative Unit. As one of the multilateral development banks through which resources of the CTF are implemented, the IDB has a Financial Procedures Agreement (FPA) with the WB as Trustee of the CTF. The text of the FPA is included as Annex I to GN-2571 (IDBDocs 35543156). The CTF Trust Fund Committee endorsed in June 2014 the scaling up of the Dedicated Private Sector Program (DPSP) I, Utility-Scale Renewable Energy. This program aims to scale up renewable energy with a focus on geothermal energy and more specifically on addressing the geothermal resource risk at early stages. US$20 million DPSP funds will be available for the SEF subject to CTF approval to be approved in tandem with the IDB loan. It is foreseen that CTF resources could be provided as contingent recovery grants, to mitigate drilling risk at early stages by transforming the loan into a grant in case the drilling is unsuccessful. The modality for the use of CTF resources will be described in the Proposal for Operation Development (POD) and in the Operating Guide (OG) of SEF.

[2] Parallel financing to complement the SEF is expected to be provided by JICA (US$20 million); availability of these resources would not affect timely and effective execution of the IDB loan as disbursement of Components 1 and 2 can proceed while JICA's contribution is being processed for approval during the early stages of the loan. Component 3 for which JICA's resources are expected to be most needed could be executed during the later stages of the loan.

[3] Debt as a percentage of Gross Domestic Product (GDP) averages 86% for EC countries.

GDP exceed 7% for all EC countries. A&B, SKN and SVG governments subsidize electricity tariffs for vulnerable consumers.

2.2 Electricity tariffs in the EC countries are indexed to fuel prices, or include a fuel surcharge with a direct pass through to end consumers. Hence, customers often see high electricity tariffs and high volatility in their monthly bills. In 2013, the average electricity tariff in the EC countries was US$0.39/kWh (with lower oil prices of US$70/barrel the tariff is estimated at US$0.33/kWh).

Table 1: Key Information on the Energy Sector in the Eastern Caribbean

Country	Peak/ Baseload Demand[4] (MW)	Installed Generation Capacity (MW)	Average Tariff (US$/kWh sold)		Generation Capacity from RE (%)	Oil Imports as a % of GDP	Fossil Fuel Imports (US$ Million)
			2013	2015 Est.			
A&B	49.2/25	83	0.44	0.34	0%	12% (2012)	150 (2012)
DOM	16.8 /8	26.7	0.41	0.32	25%	7% (2012)	41.5 (2012)
GRE	29.2 /15	48.6	0.40	0.28	1%	10% (2012)	101.1 (2012)
SL	59.7 /30	86.2	0.37	0.25	0%	9% (2011)	116 (2011)
St. Kitts	24.0 / 12	43.0	0.35	0.31	0.05%	9% (2010)	22.6 (2010)
Nevis	9.3 / 4.5	13.9	0.37	0.33	20%		
SVG	25.7 / 13	51.4	0.36	0.27	10%	11% (2011)	91 (2011)

2.3 All of the EC countries have available sustainable energy (SE) resources that could offset fossil fuel generation and generate savings. Adoption of Energy Efficiency (EE) technologies[5] can optimize electricity demand by reducing consumption by both power generators and end users through demand-side management. EE can generate financial savings for end consumers and reduce electricity bills for governments hence improving countries' fiscal situation. Renewable Energy (RE) can provide alternative sources of power generation that are both more cost-effective and less harmful for the environment than diesel generation.

2.4 Among the SE technologies that can be developed to achieve the region's SE potential[6], geothermal energy (GE) is the largest available resource for five of the islands (except A&B) and would provide the lowest cost and most reliable electricity generation with the possibility in some cases[7] of exporting power to neighboring islands via undersea cables. When comparing these technologies based on the amount of barrels of oil that each would displace and their all-in cost or levelized cost of energy (LCOE), GE offers the most fossil fuels substitution with the lowest LCOE.

2.5 SE potential, however, remains largely unrealized in the EC. The main barriers to SE in the EC are: (i) high capital costs; (ii) lack of access to credit at affordable rates; (iii) inadequate legislative, regulatory and policy frameworks; (iv) limited fiscal space for governments to acquire new public debt; (v) insufficient specialized technical skills; and (vi) RE resource risk (especially in GE).

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[4] Baseload demand is assumed to be approximately half of the peak load.

[5] The key EE technologies for the EC can be divided into the following groups: (i) lighting; (ii) air conditioning; (iii) refrigeration (iv) mechanical applications; (v) solar water heating, and (vi) other efficient appliances.

[6] The key SE technologies can be divided into: (i) baseload power generation including hydro, waste to energy and geothermal; (ii) intermittent power generation including solar PV and wind; and (iii) EE.

[7] Nevis could be connected to St Kitts, Dominica to Guadeloupe, and Dominica to Martinique with a 5 Km, 70Km and 100Km undersea cable respectively.

2.6 Enabling legal, policy and regulatory frameworks are required for the realization of RE development in the region. EC countries have taken steps to improve their frameworks to promote the adoption of RE. However, significant work and changes are required for the successful implementation of RE in general and GE in particular.

2.7 The SEF is aligned with IDB's institutional priorities as outlined in the Report on the Ninth General Increase in the Resources of the IDB (GCI-9) as it contributes to the goals of: (i) supporting development in small and vulnerable countries (EC islands); (ii) assisting borrowers in dealing with mitigation and adaptation to climate change, sustainable energy and environmental sustainability; and (iii) increasing regional cooperation and integration (by supporting GE and the potential to interconnect and export power to other islands). The program is in line with the IDB's strategic initiatives on energy in the Caribbean; the Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (GN-2609-1); the Infrastructure Strategy (GN-2710-5); the Public Utilities Policy (GN-2716-6) and the Caribbean Strategic Agenda on Integration (SAI)[8] and its targets.

2.8 On January 27, 1977, the Bank Charter was amended to allow the Bank to provide financial resources to the CDB to support the development of its members. On September 28, 1977, the Bank and the CDB entered into an agreement setting forth the general standards applicable to operating relations between both institutions[9]. Since then, the Bank has financed five global loan programs[10] to the CDB totaling US$114 million where resources were on-lent by the CDB to projects in its member countries.

B. Objectives and expected results

2.9 The SEF will be a Global Credit Loan (GCL) with the objective of contributing to diversification of the energy matrix in the EC by promoting the implementation of EE and RE technologies to reduce the region's dependency on liquid fossil fuels in an effort to reduce the cost of power generation and electricity tariffs.

2.10 The beneficiary countries are those mentioned in paragraph 2.1. The Bank will provide a GCL to the CDB, which would on-lend the resources to finance eligible sub-loans in the beneficiary countries according to the following SEF components:

Component 1: Energy Efficiency – will provide loans to public sector actors to promote EE measures such as: (i) retrofitting government buildings; (ii) installing new or replacing existing streetlights with more efficient ones; (iii) increasing power generation efficiency; and (iv) implementing EE programs for small and medium enterprises (SMEs) and housing projects.

Component 2: Regulatory framework, institutional strengthening and capacity building – will provide technical assistance to the Executing Agency (EA) to

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[8] SAI provides the framework for identifying Sectors and Action Lines in which Caribbean countries and the Bank can increase operational collaboration to meet the goals of the GCI-9 mandate on global and regional integration.

[9] All bank operations with the CDB, the SEF included, are in accordance with the three fundamental principles defined in the Bank's Operational Policies and Strategies Manual (OP-601) for lending to sub-regional financial institutions: (i) compatibility of strategies and policies; (ii) complementarity of actions; and (iii) additionally of resources, and follow the operating mechanisms set forth in the Manual, including risk analysis.

[10] The global loan currently under execution (RG-L1018) reached eligibility in December 2013 and has disbursed 36% of total funds as of April 2015.

strengthen its capacity as required to implement the SEF, particularly regarding lending to private sponsors[11], and to EC countries for: (i) developing an effective legal, policy and regulatory framework for the implementation of SE projects in the region; (ii) strengthening their technical, institutional, environmental and regulatory capacity; and (iii) acquiring the necessary skills to enable SE development.

Component 3: Renewable Energy – will provide loans to implement RE projects. **Sub-component 3A** will finance intermittent RE public sector projects such as wind power and solar PV. **Sub-component 3B** will finance base-load projects such as GE, hydro and waste to energy projects. Funds for geothermal projects will be made available through a facility called the **GeoSmart Facility** to address the specific challenges that GE development faces given its risk profile; concessional financing terms are required to reduce the exploration risk and therefore attract private sponsors who are expected to be the sub-borrowers. The GeoSmart Facility will provide a range of financial products to public sector actors and/or public-private partnerships (PPP)[12], customized for each stage of geothermal development: **(1) Pre-investment activities** for which a mix of grants and concessional lending are best suited to unlock investments will include: (i) surface studies (3Gs), including social and environmental impact assessment, and their integration; and (ii) drilling of early exploration wells (slim holes); **(2) exploration activities** for which risk mitigation instruments such as contingent recovery grants are essential will include: (i) exploration drilling program (full size wells); and (ii) feasibility studies for targeted reservoirs, including social and environmental impact assessment; and **(3) field and power plant development activities** for which concessional lending is called for will include: (i) production drilling (production and reinjection wells); (ii) engineering and construction of power plants; and (iii) substations and transmission lines.

2.11 **Expected results.** The development of 60MW of RE and the implementation of EE measures saving 34GWh/year, displacing liquid fossil fuel based generation, could result in: (i) a reduction[13] from an estimated average cost of service of US$0.33/kWh (at a fuel price of US$70 per barrel) to US$0.25/kWh (a 17% reduction); (ii) a reduction in fossil fuel imports of 750,000 barrels per year (a 42% reduction, when the EC imports ~1.8 million barrels/year) resulting in an annual reduction in imports estimated at US$52 million (or US$38 million with fuel price of US$50 per barrel); and (iii) reductions in CO_2 emissions of 355,000 metric tons per year.

III. TECHNICAL ISSUES AND SECTOR KNOWLEDGE

3.1 The CDB will be the Borrower and the EA for the SEF and will work in close collaboration with IDB and other donors providing parallel financing. Operational Guidelines will be developed to define in detail the use of SEF resources. Annex IV describes completed work and proposed sector work needed to prepare the project[14].

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[11] Given how PPPs are relatively new for the region and how CDB's private sector lending is small relative to its overall portfolio, the SEF through Component 2 will enhance the EA's capacity to engage with the private sector and with PPP's. Complementary to component 2, the CDB has launched the Caribbean PPP Support Program.

[12] Including in the form of Special Purpose Vehicles (SPVs) that may be led by a government or by the private sector

[13] Reduction would be 35% if using fuel prices of 2013 (US$98/barrel) or 14% using fuel prices of US$50/barrel.

[14] Bank operations include the Technical Cooperation Support for Cofinancing of Renewable Energy and Energy Efficiency (RG-T2480); EC countries can benefit from this TC subject to existing Bank rules.

3.2 Mitigation actions will be defined during project preparation to the following risks: (i) identifying viable RE resources and ensuring adequate access to RE development sites; (ii) duplication of efforts due to multiple actors in the region; (iii) commitment from potential beneficiaries to promote SE due to persistent low oil prices. Appendix II (risk assessment) provides further information.

3.3 As part of the Proposal for Operation Development (POD), the Project Team will work on, among others, the following project design issues: (i) Ensuring that the SEF provides equitable opportunity of access to all beneficiary countries while having a flexible design (financing instruments) to address EC country specific project needs, considering their diverse development stages and ownership and business models; (ii) Ascertaining the feasibility of providing project funds to the private sector; (iii) Defining the mechanism for the CDB to on-lend concessional SEF resources to beneficiaries[15]; and (iv) Defining capacity building and institutional strengthening requirements of executing agency and beneficiary countries.

IV. Environmental Safeguards and Fiduciary Screening

4.1 **Environmental and social risks.** As a GCL, this operation is classified for its environmental and social impact as a financial intermediary operation for which ex-ante impact classification is not yet feasible as per the provisions of Directive B.13 of the IDB's Environment and Safeguards Compliance Policy (OP-703). The GE projects currently contemplated under the GeoSmart Facility include high risk operations, some being located in sensitive areas such as national parks. As part of the due diligence, the Bank will develop an environmental and social procedure. The CDB will lead the assessment of each sub-project under the SEF, working closely with IDB and JICA. Annex III (Environmental and Social Strategy) provides more details.

V. Exceptions to Bank Policies

5.1 Given the consistency of CDB procurement policies with those of the IDB (GN-2349-9 and GN-2350-9), CDB policies will be applied for the procurement of goods, works and services receiving financing from the SEF. However, considering that IDB policies require that funds from Bank loans be used only for procurement of activities contracted with firms or individuals of IDB member countries, an exception will be requested for approval by the Board of Executive Directors so that goods, works and services providers from CDB member countries, which are not members of the IDB, may participate in the procurement processes for activities to be financed with resources of the SEF.

VI. Resources and Timetable

6.1 The foreseen Proposal for Operation Development (POD) due date is August 11, 2015 (so an approved POD can be sent to CTF by September 2015) for consideration for approval by the Board on November 25, 2015. US$95,000 are required to complete its preparation; Annex V presents the timeline and resource requirements in more detail.

[15] The pricing of sub-loans will reflect project risk, while at the same time preserving the concessional nature of SEF funds that is required for GE projects

CONFIDENCIAL

[1] La información contenida en este Anexo es de carácter deliberativo, y por lo tanto confidencial, de conformidad con la excepción relativa a "Información Deliberativa" contemplada en el párrafo 4.1 (g) de la "Política de Acceso al Información" del Banco (Documento GN-1831-28).

SAFEGUARD POLICY FILTER REPORT

PROJECT DETAILS	
IDB Sector	[Not Set]
Type of Operation	Financial Intermediation/Global Credit
Additional Operation Details	
Investment Checklist	Generic Checklist
Team Leader	[Not Set]
Project Title	Toolkit: Sustainable Energy Facility (SEF) for the Eastern Caribbean
Project Number	[Temporary Project]
Safeguard Screening Assessor(s)	Vanegas Rico, Wilkferg (wilkfergv@IADB.ORG)
Assessment Date	2015-03-17

SAFEGUARD POLICY FILTER RESULTS		
Type of Operation	[Not Set]	
Safeguard Policy Items Identified (Yes)	Activities to be financed by the project are in a geographical area and sector exposed to natural hazards* (Type 1 Disaster Risk Scenario).	(B.01) Disaster Risk Management Policy– OP-704
	The operation itself has a potential to exacerbate hazard risk* to human life, property, the environment or the operation itself (Type 2 Disaster Risk Scenario).	(B.01) Disaster Risk Management Policy– OP-704
	The Bank will make available to the public the relevant Project documents.	(B.01) Access to Information Policy– OP-102
	Does this project offer opportunities to promote gender equality or women's empowerment through its project components?	(B.01) Gender Equality Policy– OP-761
	The operation is in compliance with environmental, specific women's rights, gender, and indigenous laws and regulations of the country where the operation is being implemented (including national obligations established under ratified Multilateral Environmental Agreements).	(B.02)
	The operation (including associated facilities) is screened and classified according to their potential environmental	(B.03)

	impacts.	
	The operation may be of higher risk due to controversial environmental and associated social issues or liabilities.	(B.04)
	Consultations with affected parties will be performed equitably and inclusively with the views of all stakeholders taken into account, including in particular: (a) equal participation of women and men, (b) socio-culturally appropriate participation of indigenous peoples and (c) mechanisms for equitable participation by vulnerable groups.	(B.06)
	The Bank will monitor the executing agency/borrower's compliance with all safeguard requirements stipulated in the loan agreement and project operating or credit regulations.	(B.07)
	Affects natural resources of a country not involved in the project, including areas such as waterways, coastal marine resources, protected areas, regional air shed and/or aquifers.	(B.08)
	Environmental or culturally sensitive areas, defined in the Policy as critical natural habitats or critical cultural sites in project area of influence.	(B.09)
	Conversion of Natural Habitats in project area of influence.	(B.09)
	The operation has the potential to impact the environment and human health and safety from the production, procurement, use, and disposal of hazardous material, including organic and inorganic toxic substances, pesticides and Persistent Organic Pollutants (POPs).	(B.10)
	The operation has the potential to pollute the environment (e.g. air, soil, water, greenhouse gases...).	(B.11)
	Operation for which ex-ante impact classification may not be feasible. These	(B.13)

	loans are: Policy-based loans, Financial Intermediaries (FIs) or loans that are based on performance criteria, sector-based approaches, or conditional credit lines for investment projects.	
	Suitable safeguard provisions for procurement of goods and services in Bank financed projects may be incorporated into project-specific loan agreements, operating regulations and bidding documents, as appropriate, to ensure environmentally responsible procurement.	(B.17)
Potential Safeguard Policy Items(?)	No potential issues identified	
Recommended Action:	Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s), including B13, for guidance. No project classification required. Submit Report and PP (or equivalent) to ESR.	
Additional Comments:		

ASSESSOR DETAILS	
Name of person who completed screening:	Vanegas Rico, Wilkferg (wilkfergv@IADB.ORG)
Title:	
Date:	2015-03-17

COMMENTS
No Comments

ENVIRONMENTAL AND SOCIAL STRATEGY (ESS)[1]

I. OVERVIEW

1.1 The SEF will be a Global Credit Loan (GCL) with the objective of contributing to diversification of the energy matrix in the Eastern Caribbean (EC) by promoting the implementation of EE and RE technologies to reduce the region's dependency on liquid fossil fuels in an effort to reduce the cost of power generation and electricity tariffs. The Bank will provide a GCL to the CDB, which would on-lend the resources to finance eligible sub-loans in all beneficiary countries according to the following SEF components:

Component 1: Energy Efficiency – will provide loans to public sector actors to promote EE measures such as: (i) retrofitting government buildings; (ii) installing new or replacing existing streetlights with more efficient ones; (iii) increasing power generation efficiency; and (iv) implementing EE programs for small and medium enterprises (SMEs) and housing projects.

Component 2: Regulatory framework, institutional strengthening and capacity building – will provide technical assistance to the Executing Agency (EA) to strengthen its capacity as required to implement the SEF and to EC countries for: (i) developing an effective legal, policy and regulatory framework for the implementation of SE projects in the region; (ii) strengthening their technical, institutional, environmental and regulatory capacity; and (iii) acquiring the necessary skills to enable SE development.

Component 3: Renewable Energy – will provide loans to implement RE projects. Sub-component 3A will finance intermittent RE public sector projects such as wind power and solar PV. Sub-component 3B will finance base-load projects such as GE, hydro and waste to energy projects. Funds for geothermal projects will be made available through a facility called the GeoSmart Facility to address the specific challenges that GE development faces given its risk profile. The GeoSmart Facility will provide a range of financial products to public sector actors and/or public-private partnerships (PPP), customized for each stage of geothermal development: (1) Pre-investment activities for which a mix of grants and concessional lending are best suited to unlock investments will include: (i) surface studies (3Gs), including social and environmental impact assessment, and their integration; and (ii) drilling of early exploration wells (slim holes); (2) exploration activities for which risk mitigation instruments such as contingent recovery grants are essential will include: (i) exploration drilling program (full size wells); and (ii) feasibility studies for targeted reservoirs, including social and environmental impact assessment; and (3) field and power plant development activities for which concessional lending is called for will include: (i) production drilling (production and reinjection

[1] This ESS will be made available to the public in accordance with the IDB's policy on information disclosure. The ESS does not represent either the IDB's approval of the Facility or verification of the ESS completeness or accuracy. The IDB, as part of its due-diligence on the feasibility of the Facility, will assess the environmental and social aspects. This assessment will be presented in the Project Environmental and Social Management Report that will be prepared by the IDB, and will be made publicly available prior to consideration of the Facility by the IDB's Board of Executive Directors.

wells); (ii) engineering and construction of power plants; and (iii) substations and transmission lines.

1.2 The GeoSmart Facility will support the development of GE in the EC, which will contribute to the development of 10MW (±5) geothermal power plants in the five Eastern Caribbean islands with geothermal potential.[i] However, the actual size of the plant built will be based on Government's planned initiatives, the size of the geothermal resources, and the availability of additional grant resources and private funding for each individual plant. The program will finance pre-investment studies through power plant development. Table 1 shows the current status and estimated cost to develop GE in the EC, which is approximately US$379 million.

Table 1: Current Status and estimated cost to develop 10MW GE by stage (US$ millions)

Country	Stage 1a: Pre-Invest-ment (Studies)	Stage 1b: Pre-investment[2] (Slim hole drillings)	Stage 2: Exploration (Full scale drillings)	Stage 3: Field Development[3]		Total
				(Production/re-injection wells)	(Plant)	
Dominica	(done)	(done)	(done)	7	45	52
Grenada	1.5	6	14	21	45	87.5
St. Lucia	0.5	6	14	21	45	86.5
SKN	(done)	(done)	(done)	21	45	66
SVG	1.0	6	14	21	45	87
Total	**3**	**18**	**42**	**316**		**379**

1.3 The Caribbean Development Bank (CDB) would be the executing agency and borrower for the program that would implement a comprehensive initiative to support EE and RE in the region. The Program's support for geothermal development will involve using innovative financial instruments and the technical and financial assistance of IDB, JICA, and other potential donors. All grant and loan resources to support geothermal development in the EC would be channeled by the CDB, with the exception of the grant resources from JICA, which would be channeled directly to the beneficiary countries.

II. STATUS AND COMPLIANCE

2.1 Based on Directive B.13 of the Environment and Safeguards Compliance Policy (OP-703), the Facility is classified as a Financial Intermediary and as such this operation is not categorized according to its potential environmental and social impacts and risks. The Facility's target investments include both energy efficiency and renewable energy, the latter of which includes wind, solar and geothermal, and presents the potential for significant environmental and social risks. At this stage most information is known on the five geothermal projects located respectively in Dominica, Grenada, St-Lucia, St-Kitts

[2] Additional costs may be incurred to enable pre-investment activities in the development sites.
[3] Does not include substations and transmission lines.

and Nevis and. St Vincent and Grenadines. A number of these geothermal projects are located in critical natural habitats and will be classified as high risk, falling into Category A and high risk Category B operations under the IDB's environmental and social impact classification system. Based on the initial information presented, this Facility is preliminarily categorized as high risk (FI-1). Sub-projects, particularly in renewable energy, will likely trigger the following directives of IDB's OP-703 Environmental and Safeguards Policy: B.1, Bank Policies; B.2, Country Laws and Regulations; B.3, Screening and Classification; B.5, Environmental Assessment Requirements; B.6, Consultations; B.7, Supervision and Compliance; B.9 Natural Habitats and Cultural Sites; B.11, Pollution Prevention; and B.12 Projects under Construction. The Access to Information Policy also applies for this Global Credit Loan. Based on available documentation, it is not expected that OP-710 on Involuntary Resettlement or OP-765 on Indigenous Peoples will be triggered for this Project. However, the due diligence will examine if land acquisition, economic displacement or impacts to indigenous peoples will occur in relation to the proposed sub-projects.

III. ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

3.1 The investment portfolio under this Program is proposed to include: 20% in Component 1 and Component 3A (energy efficiency, solar and wind), and 80% in Component 3B (geo-thermal). The potential for impacts in the smaller 20% is largely associated with wind and solar projects, which can include the following: (i) conversion of natural habitat, (ii) visual impacts associated with the change in land use, (iii) potential impacts to sensitive species of flora and fauna, particularly related to birds and bats fatality in the context of wind, (iv) dust emissions during construction activities, and water use, primarily during operations (v) increased heavy traffic and potential traffic accidents in the vicinity of the project site (wind, solar); (vi) potential social concerns depending on land tenure issues on the site in question. Energy efficiency aspects relate largely to the management of proper disposal of wastes and potentially hazardous materials.

3.2 In the context of geothermal, the bulk of the proposed investment activities, the potential risks are more significant in light of certain known site locations. The exploration phase of each project will include possible negative environmental impacts and risks, though the more significant impacts are expected during construction. Each of the projects will involve drilling and testing of new production wells, reinjection wells, construction of the power plants buildings, installation of equipment and, potential new access roads and electrical transmission associated facilities. Main construction impacts expected are: (i) potential contamination of soil and ground water by drilling mud (essentially a suspension of a natural clay material - bentonite - with some additives added), drilling mud with cuttings, or through the reinjection of the geothermal fluid (essentially a mixture of hot water and steam, at temperatures that can reach 290°C, with dissolved salts and gases); (ii) increased water demand from wells drilling and testing and for the cooling system; (iii) potential land contamination due to the disposal of drilling mud and solid wastes; (iv) noise and vibrations generated during drilling; and (v) effects of drilling on groundwater aquifers, nearby hot springs, natural thermal features, and induced micro-seismicity and/ground subsidence; (vi) increased heavy traffic and potential traffic

accidents in the vicinity of the project site; (vii) noise and dust emissions; and (viii) soil erosion and loss of vegetation. Most of these construction impacts and risks can be adequately mitigated through the implementation of appropriate environmental, health and safety management plans and standard operating procedures (SOPs). Once in operation, main impacts and risks are: (i) an increased level of micro-seismicity in the region; (ii) land subsidence; (iii) surface and underground water contamination due to accidental spills; (iv) mud contamination; (v) air emissions of hydrogen sulfide; (vi) health and occupational accidents; and (vii) increased exposure of community and workers to explosions, well blowouts and pipeline failures.

3.3 **Management of Environmental and Social Aspects.** CDB's current Environmental and Social Policies and Review Procedures (ESRP) date from 2009. The ESRP has been updated and is expected to receive approval from the Advisory management Team at the end of March 2015. It includes a set of nine environmental and social performance standards ("PS") that reflect the principles, core policies, standards and best practice approaches adopted and used in the treatment of sensitive environmental and social issues by the multilateral financial and development community. A comparative policy analysis undertaken by the IDB, concluded that in general the ESRP is consistent with the principles of the IDB Environment and Safeguard Compliance Policy (OP-703), however it is organized as a series of Performance Standards in much the same format as the IFC Performance Standards.

3.4 Through a previous loan to CDB (RG-L1018), IDB sought to specifically encourage alignment of CDB's safeguard policies with that of IDB with respect to operationalizing CDB's Information Disclosure Policy (IDP). CDB has since operationalized the IDP and project appraisal reports including environment and social analysis are disclosed on the Bank's website prior to Board approval. CDB does not yet have a dedicated internal independent mechanism for managing project complaints. However it expects to complete the design of a new Framework for project accountability for consideration of its Board in March 2015. This Framework will include a project complaints mechanism including issues related to environment and social safeguards.

3.5 Procedurally, CDB Environmental and Social specialists work as integral members of an assigned project team throughout the project cycle. Appraisal teams analyze the feasibility of the project from an economic, technical, financial, environmental, legal, and institutional standpoint to ensure project objectives can be achieved. The ESRP provides detailed steps on the process of screening and categorization of projects in the CDB's Project cycle, which is consistent with the A, B, C categorization model of the IDB. Additionally projects may be unclassified (such as emergency loans) or may be classified as financial intermediation (equivalent to IDB B.13 Category), however these also are then given a category according to the potential environmental and social risks of sub-projects.

3.6 **Protocol on Management of Geothermal and other High Risk Sub-Projects.** CDB and IDB have agreed that leadership on environmental and social analysis at the project level will be driven by CDB in close collaboration with IDB. Given the high risk nature of sub-projects financed in either geothermal or wind, both institutions will ensure that the projects comply with the specifics of their respective and largely harmonized

environmental and social policies. As such, CDB and IDB will agree to a protocol for environmental and social due diligence, project management, and monitoring. The Protocol will include the following stages and components:

1. Project Identification/ Screening	• Presentation to IDB by CDB of basic project eligibility material • Project management planning between ESG project teams (IDB and CDB)
2. Project Preparation /Assessment (Pre-Investment Activities)	• Provision of initial environmental, social and health and safety information for assessment and classification • Identification of key risks, and provisional Safeguard gaps • Engagement of external consultant to lead/support the preparation of ESIA material, and other E&S documentation • CDB/IDB pre-due diligence (as necessary) • Preparation and disclosure of E&S appraisal documentation
3. Due Diligence (Exploration Activities)	• Completion of document preparation • CDB/IDB formal due diligence of risks, impacts, and mitigation measures, and identification of Safeguard gaps • Development of project specific Environmental and Social Management Plans • Disclosure of ESIA • Preparation and disclosure of environmental and social risk and requirement report
4. Approval / Contract Negotiation	• Incorporation of all necessary environmental and social covenant material pertaining to CDB/IDB Safeguard requirements
5. Supervision and Monitoring	• Joint periodic supervision of project per requirements and management plans
6. Reporting	• Review of regular Sponsor reports on project operation

3.7 The proposed stages within the Protocol will be refined between both teams during due diligence for the Facility and incorporated into the Regulatory Operating Manual, which will be finalized and implemented prior to formal consideration of any project.

IV. STRATEGY FOR ENVIRONMENTAL AND SOCIAL DUE DILIGENCE

4.1 The environmental and social due diligence ("ESDD") for the Facility will focus on agreeing on the key elements of the Protocol with IDB, the particular approach with regard to Geothermal project finance investments, as well as the fundamental operational aspects in relation to all Category A sub-projects. This will include details on early communication to IDB about the financing of projects to enable IDB to identify: (i) the need for complementary analysis; (ii) the need to implement mitigation measures to address any non- compliance with IDB policies; (iii) the monitoring framework to be implemented during the execution of the Facility; and (iv) evaluate available information

at the sub-project level, to include visits if necessary, to identify E&S feasibility and the severity of potential risks.

4.2 Additionally, during due diligence the IDB and the CDB will agree on the integration of the Facility's Protocol into CDB's existing processes and procedures to manage environmental and social risk. The results of the due diligence will be presented in an Environmental and Social Management Report ("ESMR"). This will include a description of the key aspects of the Protocol, related contractual requirements, and the identification of the activities and its timeframe that will need to conducted as part of the initial phase of implementation of the Facility's management mechanisms.

[i] Dominica, Grenada, Nevis, Saint Lucia, and Saint Vincent

INDEX OF COMPLETED AND PROPOSED SECTOR WORK

Area	Sudy/Technical Support	Description of works	Dates	References and electronic links
Knowledge	Study of Situation for Geothermal Energy Development; FINAL REPORT; April 2014; JICA, West Japan Engineering Consultants, Inc.	This study analyzes the situation of geothermal development in Dominica, St. Lucia, St. Vincent, and Grenada in order to identify challenges these countries face in develping geothermal resources.	2014	Not published.
Knowledge	Caribbean Regional Energy Integration Assessment: Scenarios and Opportunities	This study analyzes options for Caribbean countries, especially small ones that have not been able to benefit from cheaper fuel costs and other advantages of larger-scale markets, toaddress their enrgy problems through integration in the energy sector.	2014	Not published.
Knowledge	Strategy for Developing Geothermal Potential through Public-Private Partnerships in the Eastern Caribbean.	This document analyzes factors that enabled geothermal development in key geothermal markets, the potential for developing geothermal resources in the Eastern Caribbean, and proposes strategy for developing geothermal potential thorugh Public-Private Partnerships (PPPs).	2014	Not published.
Knowledge	Sustainable Energy in the Eastern Caribbean: Achieving an Unrealized Potential.	This paper focuses on how the Eastern Caribbean can achieve its unrealized potential to implement economically viable renewable energy and energy efficiency projects that displace fossil fuel-based electricity.	2014	To be published in 2015.
Bank Operations	The 2012 IDB - CDB Global Loan Program for IDA-Eligible OECS Member Countries (RG-L1018, US$ 20 million), which included SE as an eligible area.	The objective of the program is to contribute to accelerate the social and economic development of the four IDA-eligible OECS member countries This would be achieved via the financing of a Global Loan to the CDB, which would on-lend the funds for the financing of public sector projects in said eligible countries.	2012	
Bank Operations	The Sustainable Energy for the Eastern Caribbean Program (SEEC) led by the CDB which includes grant funding from the EU's Caribbean Infrastructure Fund (EU-CIF) and UK Department for International Development (DFID) (~ US$ 10 million).	The SEEC will provide non reimbursable resources for energy efficiency and intermittent renewable energy for power generation in the Eastern Caribbean; geothermal energy is not considered in this operation.	Estimated approval 2015	
Bank Operations	The regional technical cooperation Support for Cofinancing of Renewable Energy and Energy Efficiency (RG-T2480)	Support for Cofinancing of Renewable Energy and Energy Efficiency (RG-T2480) aims to reduce dependency on fossil fuels in Central America and the Caribbean regions; EC countries can benefit from this TC subject to existing Bank rules.	Approved May 2015	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39609162
Missions	Identification.	March 9 - 13, 2015.	2015	
Missions	Analysis.	Estimated dates, June 1-10 2015 The Project Team will review lessons learned in other Bank work and the following project design issues after eligibility: i) Ensuring that the SEF provides equitable access to all beneficiary countries while having a flexible design (financing instruments) to address EC country specific project needs, considering their diverse development stages and ownership and business models ; ii) Harmonizing the timelines and eligibility requirements of different funding sources; iii) Reviewing legal and regulatory frameworks of each EC country; iv) Ascertaining the feasibility of and defining the on-lending mechanism to provide project funds to the private sector; v) efficiently matching the countries' and individual projects' funding needs to the terms and conditions, timing, eligibility and use of proceeds limitations of each funding source; and vi) Defining capacity building and institutional strengthening requirements of executing agency and beneficiary countries.	2015	
Missions	Negotiation.	Estimated dates, October 2015.	2015	

CONFIDENCIAL

[1] La información contenida en este Anexo es de carácter deliberativo, y por lo tanto confidencial, de conformidad con la excepción relativa a "Información Deliberativa" contemplada en el párrafo 4.1 (g) de la "Política de Acceso al Información" del Banco (Documento GN-1831-28).