ADMINISTRATION AGREEMENT

between

THE INTER-AMERICAN DEVELOPMENT BANK

and

THE ITALIAN MINISTRY FOR THE ENVIRONMENT, LAND AND SEA

regarding

Project Specific Grant to the Inter-American Development Bank for Project No. RG-L1112; RG-G1013; RG-T3170 titled, "Sustainable Energy Facility (SEF) for the Eastern Caribbean Expanded (SEF-Expanded)

THIS ADMINISTRATION AGREEMENT is entered into between the Inter-American Development Bank (the "Bank") and the Italian Ministry for the Environment, Land and Sea (the "Donor") (hereinafter together referred to as the "Parties").

WHEREAS, the Bank has designed Project No. RG-L1112; RG-G1013 and RG-T3170 titled, "Sustainable Energy Facility (SEF) for the Eastern Caribbean Expanded (SEF-Expanded)" (the "Project"), as described in the preliminary project document attached hereto as Annex A, as may be modified in a revised project document, identified by the same Bank project number (the "Project Document"), to be approved by the Bank pursuant to Section 11 below;

WHEREAS, the Donor has agreed to support the execution of the Project by providing a project specific grant to be administered by the Bank; and

WHEREAS, the Bank is prepared to receive and administer the contribution funds to be made available by the Donor.

NOW, THEREFORE, the Parties hereby agree as follows:

1. The Donor will make available to the Bank a grant contribution in the amount of EUR5,000,000.00 (five million euros) (the "Contribution") to be administered by the Bank to co-finance the Project.

2. The Contribution will be solely for the purposes indicated in the Project Document (subject to the approval mentioned in Section 11 below). Any material deviations from the objectives and activities of the Project described in the Project Document will require the Donor's written approval.

3. Following the signature of this Administration Agreement by the Parties, the Donor will transfer the Contribution to the Bank in one single installment, upon the Bank's written request to an account indicated by the Bank in writing. Upon receipt of such deposit, the Bank will convert the euros into United States dollars and will deposit the resulting amount (subject to the exchange rate prevailing at the time of conversion) into an account denominated in U.S. dollars (the "Account"). The Account includes resources provided as grant funds by other donors for other Bank projects. The Contribution will be administered in the Account without distinction from other donors' contributions.

4. The Bank will administer the Contribution in accordance with the provisions of this Administration Agreement and the Bank's applicable policies and procedures. The Bank will exercise the same care in the discharge of its functions, as described in this Administration Agreement, as it exercises with respect to the administration and management of resources from other donors, and will have no further liability to the Donor in respect thereof.

5. The Contribution will be accounted for separately from the Bank's assets, and will be administered together with other contributions received by the Bank. The Bank may freely exchange the Contribution funds into other currencies as may facilitate their administration and disbursement. The Bank will not be responsible for foreign exchange risk in the receipt, conversion or administration of Contribution funds. Further, the Bank may at its discretion invest and reinvest the resources of the Contribution pending their disbursement in connection with the Project.

6. To assist in the defrayment of the administrative costs in relation to the Contribution, the Bank will charge and retain:

    (a) a non-refundable fee equal to five percent (5%) of the total Contribution amount at the time the Contribution is deposited by the Donor into the Account; and

    (b) any investment income generated by the Contribution pending its disbursement towards the Project.

7. The Bank's procurement policies and procedures applicable to the procurement of goods and services, as well as the contracting of consulting services, carried out with the Contribution, as required by the different components of the Project will be those set out in the Project Document. Further, the Donor accepts that:

    (a) the resources of the Contribution will be completely untied; and

    (b) the consultancy services financed with the Contribution may be provided and executed by companies, specialized institutions or individuals from any Bank member country and any member country of the Caribbean Development Bank.

8. The Donor will not be responsible for the activities of any person or third-party engaged by the Bank as a result of this Administration Agreement, nor will the Donor be liable for any costs incurred by the Bank in terminating the engagement of any such person.

9. No later than April 30th of each year, the Bank will submit an annual report to the Donor detailing the progress of activities financed with the Contribution during the previous year. For the avoidance of doubt, the first annual report will be sent no later than April 30, 2019, for the execution year 2018. Promptly following the completion of the Project, the Bank will submit to the Donor a final Project report. The Donor may also request a non-audited financial expense report of the Contribution. In addition, the Donor may request an "agreed upon procedures" report issued by an external auditor selected by the Bank on the use of the Contribution resources. The cost of such auditor's report will be borne by the Donor and will not be deducted from the Contribution. The Donor will reimburse the Bank for the cost of this report promptly after receiving a written request from the Bank. The Bank will not provide audited financial statements for the Account.

10. As soon as possible upon completion of the Project, the Bank will return to the Donor any remaining uncommitted Contribution funds, unless otherwise agreed to in writing by the Parties.

11. The Donor acknowledges that the Bank's commitment to use the Contribution as contemplated herein will be subject to the Bank's formalization of all internal approvals necessary for the Project and/or the Project Document. Such internal approvals by the Bank include the approval of the Project Document, substantially in the form attached hereto as Annex A. Once the Project Document has been approved, the Bank will furnish a copy of it to the Donor, which will then be deemed incorporated into this Administration Agreement as Annex A. The Donor accepts that the final, approved version of the Project Document may vary from the attached Annex A, in which case the approved version will prevail, and no amendment to this Administration Agreement will be required.

12. The offices responsible for coordination of all matters and receiving any notice or request in writing in connection with this Administration Agreement or the Project are as follow:

(a) For the Bank:

i. All communications pertaining to donor relations and resource mobilization will be directed to:

Inter-American Development Bank
1300 New York Avenue, NW
Washington, D.C. 20577
UNITED STATES OF AMERICA
Attention: Manager, Office of Outreach and Partnerships (ORP)
Tel.: +1 (202) 623-1583
Fax: +1 (202) 312-4072
E-mail: partnerships@iadb.org

ii. Day-to-day communications regarding the management of the Contribution and the implementation of this Administration Agreement will be directed to:

Inter-American Development Bank
1300 New York Avenue, NW
Washington, D.C. 20577
UNITED STATES OF AMERICA
Attention: Chief, Grants and Co-financing Management Unit
Office of Outreach and Partnerships (ORP/GCM)
Tel.: +1 (202) 623-2018
Fax: +1 (202) 623-3489
E-mail: orp-gcm@iadb.org

(b) For the Donor:

Italian Ministry for the Environment, Land and Sea
Via Cristoforo Colombo 44
00147 Rome
ITALY
Attention: Francesco La Camera, Director General for Sustainable Development; Environmental Damage, European Union and International Affairs
Tel.: +39 06 57228101/02
Fax: +39 06 57228175
E-mail: lacamera.francesco@minambiente.it
svi-udg@minambiente.it

13. This Administration Agreement will come into force on the date of its signature by each of the Parties.

14. The Parties may amend any provision of this Administration Agreement in writing.

15. This Administration Agreement, including its Annex A, may be publicly disclosed by the Bank upon distribution of Annex A to the Bank's Board of Executive Directors, in accordance with the Bank's Access to Information Policy. Further, the Donor agrees not to publicly disclose this Administration Agreement, nor Annex A, until such disclosure by the Bank.

16. Nothing in this Administration Agreement may be construed as creating an agency relationship between the Parties.

17. Nothing in this Administration Agreement may be construed as waiver of the Bank's privileges and immunities, under international or any applicable law, including any privileges and immunities agreement.

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18. The Parties will seek to settle amicably any disputes that may arise from or relate to this Administration Agreement.

IN WITNESS WHEREOF, the Inter-American Development Bank and the Italian Ministry for the Environment, Land and Sea, each acting through its duly authorized representative, have signed this Administration Agreement in the English language as of the dates indicated below.

INTER-AMERICAN DEVELOPMENT BANK	ITALIAN MINISTRY FOR THE ENVIRONMENT, LAND AND SEA
Bernardo Guillamon Manager Office of Outreach and Partnerships	Francesco La Camera Director General
Date: November 28, 2017	Date: November 29, 2017

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

REGIONAL

SUSTAINABLE ENERGY FACILITY FOR THE EASTERN CARIBBEAN EXPANDED (SEF-EXPANDED)

(RG-L1112)

AND

GREEN CLIMATE FUND (GCF) GRANT FOR THE SUSTAINABLE ENERGY FACILITY FOR THE EASTERN CARIBBEAN EXPANDED (SEF-EXPANDED)

(RG-G1013)

AND

REPUBLIC OF ITALY (REI) GRANT FOR THE SUSTAINABLE ENERGY FACILITY FOR THE EASTERN CARIBBEAN EXPANDED (SEF-EXPANDED)

(RG-T3170)

PROPOSAL FOR OPERATION DEVELOPMENT

This document was prepared by the project team consisting of: Christiaan Gischler (INE/ENE), Project Team Leader; Jaiwattie Anganu (CMF/CJA), Alternate Team Leader; Jesus Tejeda, Camila Gonzalez, Javier Garcia and Stephanie Suber (INE/ENE); Gloria Visconti and Filippo Berardi (CSD/CCS); Betina Hennig (LEG/SGO); Zachary Hurwitz (VPS/ESG); Paloma Marcos (SCL/GDI); Giacomo Palmisano (INE/INE); Daniel Hincapie (ORP/PTR); Rochelle Franklin (CCB/CBA); Vinicio Rodriguez, Russell Franklyn, and Maria Camila Padilla (FMP/CBA).

CONTENTS

ANNEXES

ELECTRONIC LINKS

REQUIRED

1. Environmental and Social Management Report (ESMR)
2. Monitoring and Evaluation Plan (M&E Plan)

OPTIONAL

1. Technical Annex
2. Cost Benefit Analysis
3. SEF-2015 Indicative Project Pipeline
4. Revised SEF Program Project Pipeline
5. SEF Program Operating Manual
6. Regional Integration Annex
7. Challenges and Opportunities for the Energy Sector in the Eastern Caribbean: Achieving an Unrealized Potential
8. Unlocking Geothermal Power: How the Eastern Caribbean Could Become a Geothermal Powerhouse
9. Antigua & Barbuda Energy Dossier
10. Dominica Energy Dossier
11. Grenada Energy Dossier
12. Saint Kitts and Nevis Energy Dossier
13. Saint Lucia Energy Dossier
14. Saint Vincent and the Grenadines Energy Dossier

APPENDIX

REQUIRED

1. Risk Analysis Matrix

ABBREVIATIONS	
A&B	Antigua and Barbuda
AFS	Audited Financial Statements
AMA	Accreditation Master Agreement
CDB	Caribbean Development Bank
CRG	Contingent Recovery Grants
CTF	Clean Technology Fund
DOM	Dominica
EA	Executing Agency
ECC	Eastern Caribbean Countries
EE	Energy Efficiency
EIRR	Economic Internal Rate of Return
ENPV	Economic Net Present Value
ESG	Environmental, Social and Governance
ESIA	Environmental and Social Impact Assessment
ESMR	Environmental and Social Management Report
FAA	Funded Activity Agreement
FI	Financial Intermediary
GCF	Green Climate Fund
GCL	Global Credit Loan
GDP	Gross Domestic Product
GE	Geothermal Energy
GEF	Global Environment Facility
GRE	Grenada
GSI	GeoSmart Initiative
IDB	Inter-American Development Bank
LCOE	Levelized Cost of Energy
M&E Plan	Monitoring & Evaluation Plan
MW	Mega Watt
NDA	National Designated Agency
OC	Ordinary Capital
OM	Operating Manual
OSF	Other Special Funds
PPA	Power Purchase Agreements
PCR	Project Completion Report
PPP	Public Private Partnerships
PUP	Public Utilities Policy
RE	Renewable Energy
REI	Republic of Italy
SAPR	Semi-Annual Progress Reports
SEF	Sustainable Energy Facility
SEF-2015	Sustainable Energy Facility (SEF) for the Eastern Caribbean

SFR	Special Funds Resources
SKN	Saint Kitts and Nevis
SL	Saint Lucia
SPF	Safeguard Policy Filter
SSF	Safeguard Screening Form
SVG	Saint Vincent and the Grenadines
SVGCL	Saint Vincent Geothermal Company Limited
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank

PROJECT SUMMARY
REGIONAL
SUSTAINABLE ENERGY FACILITY FOR THE EASTERN CARIBBEAN EXPANDED (SEF-EXPANDED)
(RG-L1112; RG-G1013; AND RG-T3170)

Financial Terms and Conditions

				GCF (loan)	GCF (grant)	Grant from Italy
Borrower/Beneficiary: Caribbean Development Bank (CDB)			**Amortization Period:**	20 years	N/A	N/A
Executing Agency: Caribbean Development Bank (CDB)			**Disbursement Period:**	5 years	5 years	5 years
			Grace Period:	5 years	N/A	N/A
Source	**Amount US$ millions**	**%**	**Interest type:**	Fixed	N/A	N/A
IDB (Green Climate Fund)[a] (RG-L1112) (Loan):	60.00	70.1	**Interest rate:**	0.75%	N/A	N/A
			Service Fee:	0.50%[c]	N/A	N/A
IDB (GCF) (RG-G1013) (Grant):	20.00	23.4	**Commitment Fee:**	0.75%[c] [d]	N/A	N/A
IDB (Republic of Italy through its Ministry for the Environment, Land and Sea) (RG-T3170)[b]	5.5575	6.5	**Currency of Approval:**	United States dollars (US$)	United States dollars (US$)	Euros
Total:	85.5575	100				

Project at a Glance

Project Objective/Description: The objective of the SEF-Expanded is to reduce the financial, technical and institutional barriers which Geothermal Energy (GE) development encounters in the five eastern Caribbean countries (ECC) with GE potential, Dominica (DOM), Grenada (GRE), Saint Kitts and Nevis (SKN), Saint Lucia (SL) and Saint Vincent and the Grenadines (SVG), and to provide institutional strengthening and capacity building to the governments of these ECC and to the Caribbean Development Bank (CDB) for GE development.

Special Contractual Clauses prior to the first disbursement of the loan and grant resources: the Beneficiary shall present evidence that the Operating Manual (OM) of the Sustainable Energy Facility for the Eastern Caribbean (SEF-2015) has been updated, including sub-loan/sub-grant model agreements, and the operating guidelines for the proper fulfillment of the obligations of the Bank with the donors, in accordance with the terms and conditions previously agreed upon between the CDB and the Bank. (¶3.4).

Special Contractual Clauses of execution: prior to the first disbursement of each sub-loan, the Borrower shall submit to the Bank a final draft appraisal report prepared by the Borrower, including the final financial structure for the respective sub-project and the regulatory framework developments, if applicable, in terms satisfactory to the Bank. Prior to the first disbursement of each sub-project financed as contingent recovery grant or guarantee, the Beneficiary shall submit to the Bank (i) a copy of the signed agreement between the Beneficiary and the developer for the first sub-project, in terms satisfactory to the Bank; (ii) the final draft appraisal report, including the final financial structure for the respective sub-project and the regulatory framework developments, if applicable, in terms satisfactory to the Bank (¶3.5). For environmental and social contractual clauses of execution see Annex B of the Environmental and Social Management Report (ESMR).

Exceptions to Bank Policies: An exception to Bank's current procurement policies set forth in documents GN-2349-9 and GN-2350-9 is requested for approval by the Board of Executive Directors so that works, goods 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 or administered by the Bank (¶3.7).

Strategic Alignment

Challenges[e]:	SI	☐	PI	☑	EI	☑
Cross-Cutting Themes[f]:	GD	☑	CC	☑	IC	☑

[a] The Green Climate Fund (GCF) is an international fund of the United Nations Framework Convention on Climate Change (UNFCCC) which provides highly concessional reimbursable financial resources and non-reimbursable resources to promote mitigation and adaptation to climate change. The GCF at its meeting on October 14, 2016 approved a proposal to support the development of GE in five ECC (US$60 million Loan, US$20 million on Grants). The Bank and the GCF signed the Accreditation Master Agreement (AMA), which formalizes the Bank's status as an accredited GCF entity on August 29, 2017.

Non-reimbursable resources to be provided by the Republic of Italy (REI), through its Ministry of Land and Sea, will be administered by the IDB through a Project Specific Grant (PSG). On July 2017 IDB received confirmation from REI's Ministry of Land and Sea of their intention to support the SEF-

Expanded with a contribution of Euro 5,000,000, which corresponds to US$ 5,850,000 (exchange rate Dollar/Euro is 1.17). The amounts expressed in the above table and in the rest of the document are net of the 5% administration fee (US$292,500).

(b) This PSG will be administered by the Bank according to Document SC-114. The commitment of the funds will be established through a separate agreement ("Contribution Agreement"). REI grant resources will be available to the Bank upon signature of the Contribution Agreement between REI and the Bank, and receipt of the funds from REI by the Bank.

(c) The service fee and commitment fee are established based on the GCF's Financial Terms and Conditions of the Fund's Instruments (GCF/B.09/08), approved by the GCF Board of Directors on February 17, 2015. In addition to charging an interest rate on extended concessional loans, the GCF will charge an annual service fee of 0.50% on disbursed balances and a commitment fee set at up to 0.75% of the undisbursed balance to encourage disbursement.

(d) The commitment fee rate is subject to changes in the context of the negotiation between IDB and GCF of the Funded Activity Agreement (FAA) for this operation.

(e) SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

(f) GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. DESCRIPTION AND RESULTS MONITORING

A. Background, Problem Addressed, Justification

1.1 **Background.** The proposed operation, SEF-Expanded for the Eastern Caribbean is a complement to the Sustainable Energy Facility for the Eastern Caribbean (SEF-2015) approved by the Inter-American Development Bank (IDB) in October 2015. Together the SEF-Expanded and the SEF-2015 comprise the SEF Program. The objective of the SEF Program is to radically change the energy matrix of the six Eastern Caribbean Countries (ECC)[1], namely Antigua and Barbuda (A&B), Dominica (DOM)[2], Grenada (GRE), Saint Kitts and Nevis (SKN), Saint Lucia (SL), and Saint Vincent and the Grenadines (SVG) by reducing their dependency on fossil fuels for power generation and the cost of electricity. To this end, the SEF Program includes an array of financing mechanisms to support the development of Energy Efficiency (EE) and Renewable Energy (RE). The SEF Program places emphasis on developing Geothermal Energy (GE), a RE source for which five ECC have potential (all except A&B) and which has the largest potential for displacing fossil fuels in the region (¶1.8).

1.2 **Eastern Caribbean energy sector overview.** For a detailed energy sector overview of each of the five ECC see the Energy Dossiers for A&B, DOM, GRE, SKN, SL, and SVG. The ECC have taken steps to improve their governance frameworks to promote the adoption of RE for power generation. However, further work and changes are required for the successful implementation of RE in general and GE in particular. Most of the countries lack laws and regulations governing the exploration and development of geothermal resources. DOM, Nevis, and SVG have passed legislation that defines what a geothermal resource is and who owns it, and sets out the process for assigning rights to explore and exploit it. The other countries are working to prepare geothermal resource development bills which are currently at different stages.

1.3 All countries except for SKN have a vertically integrated electricity utility, responsible for generation, transmission, and distribution of electricity. In SKN, two vertically integrated electricity utilities exist; one is responsible for generation, transmission, and distribution of electricity on St Kitts and another on the island of Nevis. The electric utilities in DOM, GRE, and SL are privately owned while utilities in SVG, A&B, and SKN are entirely state owned (see Table 1).

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1 These six countries are members of the Caribbean Development Bank (CDB), but not of the IDB. The Agreement Establishing the IDB provides that the Bank may "finance the development of any of the members of the CDB by providing loans and technical assistance to that institution." (Article III, section 1). While the Accreditation Master Agreement (AMA) between the GCF and the IDB (GN-2895) includes references to the use of GCF resources in IDB's "borrowing member countries" (paragraph 6.10), management does not interpret such language to be restrictive. In addition, the GCF Board of Executive Directors has already approved this operation, including the element of on-lending to CDB member countries which are not IDB borrowing member countries. 1.1 In addition, the GCF Board of Executive Directors has already approved this operation, including the element of on-lending to CDB member countries which are not IDB borrowing member countries.

2 The Bank and the CDB are exploring reconstruction efforts in DOM, due to the damage caused by Hurricane Maria in September 2017. The effort will focus on the reconstruction of electricity grid.

Table 1: Electric Utilities in the ECC

Country/ Island	Utility	Ownership [illegible]	[illegible] Baseload Demand[3] [illegible]	Generation [illegible]	[illegible] RE	Average Fuel [illegible] 2013 [illegible]
A&B	APUA	100%	49.2/25	83	0%	NA
DOM	DOMLEC	21%	16.8/8	26.7	25%	0.18
GRE	GRENLEC	21.6%	29.2/15	48.6	1%	0.22
SL	LUCELEC	45.4%	59.7/30	86.2	0%	0.22
St. Kitts	SKELEC	100%	24.0/12	43.0	0.05%	NA
Nevis	NEVLEC	100%	9.3/4.5	13.9	20%	NA
SVG	VINLEC	100%	25.7/13	51.4	10%	0.20

1.4 **Problem addressed.** DOM, GRE, SKN, SL and SVG are Small Island Developing States located in the Eastern Caribbean region with potential to develop GE. With small and isolated power grids, they lack the scale necessary to utilize cheaper and cleaner fossil fuel options, such as natural gas, and have not yet fully developed other RE endowments. Consequently, they depend on costly imported liquid fossil fuels for electricity generation, resulting in high electricity costs for final users.

1.5 Electricity tariffs in the ECC are indexed to fuel prices, or include a fuel surcharge with a direct pass through to end consumers. Hence, customers of the electric utility companies in this region are exposed to fluctuations in international oil prices and often see high electricity tariffs and volatility in their monthly bills. In 2013, the average electricity tariff was US$0.39/kWh[4] (with lower oil prices averaging US$50/barrel the tariff is estimated at US$0.27/kWh). By comparison, the ECC's average electricity tariff is four times higher than in the State of Florida in the United States of America and about to three times higher than an average electricity tariff in Central America. In 2014, the fuel cost represented 53% of the total cost to end users. High electricity tariffs are particularly burdensome on this region given the characteristics of these economies which are predominantly driven by the commercial and tourism sectors[5].

1.6 High dependence on imported petroleum products places a heavy burden on the ECC economies. High electricity prices hinder economic growth, are disproportionately burdensome to the poor, and cause excessively high energy bills for the public sector. Therefore, public resources that could be used to provide more social services are diminished. As presented in Table 2, oil imports as a percentage of Gross Domestic Product (GDP) exceed 7%. Limited borrowing capacity, as implied by the Debt-to-GDP ratios averaging 83.9%, limits governments ability to invest in RE thus perpetuating dependence on imported fossil fuels and its tightening effect on fiscal space.

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

[4] Castalia (2014). "Caribbean Regional Energy Integration Assessment: Scenarios and Opportunities." Report to IDB.

[5] More than 50% of tourism sector costs are related to energy use.

Table 2: Key Information on the Energy Sector in the Five ECC

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DOM	0.41	0.34	7% (2012)	41.5 (2012)	87.7%
GRE	0.40	0.26	10% (2012)	101.1 (2012)	89.2%
SL	0.37	0.24	9% (2011)	116 (2011)	81.1%
St. Kitts	0.35	0.27	9% (2010)	22.6 (2010)	67.2%
Nevis	0.37	NA			
SVG	0.36	0.30 (2015)	11% (2011)	91 (2011)	85.0%

1.7 The governments in the Caribbean continue to demonstrate strong commitment to pursuing RE despite the recent decline in international oil prices. Current low oil prices alleviate to some extent the pressure that high electricity tariffs can place on the economy. However, tariffs are still higher than the Latin American average and susceptible to the characteristic volatility of oil products in the global market. That is why the ECC keeps pushing forward to achieve their NDC commitments and the regional sustainable energy targets adopted by Caribbean Community member countries. For some countries, 100% generation from RE is targeted. For ECC, GE would go a long way towards realizing this target.

1.8 **Proposed intervention.** The SEF-Expanded aims to help de-risk GE projects making it more likely that GE development attracts private investment and expertise, leverages other commercial debt resources, and allows for electricity tariffs to reflect an appropriate mix of concessional finance, commercial debt and equity. Also, to enable GE development in the region, the program provides institutional strengthening support for the ECC governments and the CDB.

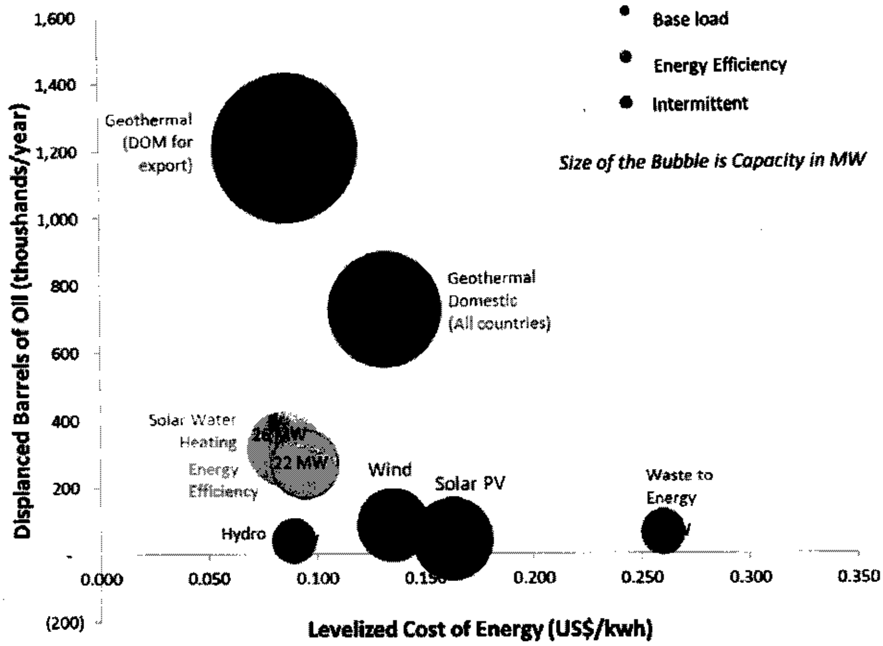
1.9 Each of the five ECC is expected to develop its own GE potential and geothermal generation plant. DOM, GRE, SKN, and SVG are each expected to develop a 10 Mega Watt (MW) plant while, SL is expected to build a 20MW plant. Each of these projects is at a different stage of development. Details on the progress shown by each of the GE projects are presented in the Technical Annex.

1.10 **Rationale for an emphasis on GE.** The five ECC are known to have the potential to develop GE[6]; a summary of the results of feasibility studies and project design studies for each of the ECC is presented in the Technical Annex. Figure 1 compares GE with other technologies that can be developed to realize the region's sustainable energy potential. The vertical axis shows the number of barrels of oil that each technology would displace while the horizontal axis shows their all-in cost or Levelized Cost of Energy (LCOE). The size of the bubbles shows the potential of the technology in terms of MW of potential installed capacity and the color indicates whether the technology is baseload or intermittent. As shown, GE, a baseload energy with more than 90% capacity factor, not only offers the lowest LCOE (around US$0.10/kWh), the largest potential displacement of oil barrels (more than 2 million barrels), the largest estimated installed capacity potential (over 160MW), but also offers the

[6] (FN21) GE potential is manly given by natural thermal activity, thermal water springs, and active or non-active volcanic activity. All five ECC have shown some kind of thermal activity which was later confirmed with surface studies.

possibility, in some cases, of exporting power to neighboring islands via undersea cables[7].

Figure 1: Key RE and EE Alternatives for the ECC



1.11 **Rationale for a risk mitigation approach.** International experience shows that risk mitigation instruments and concessional financing can be effective at facilitating the early exploration stages and successfully developing a power plant while reducing electricity tariffs for end users[8]. Once the geothermal resource has been proven, both in quantity and quality, GE projects are more likely to have access to appropriately priced financing. The high risk associated with exploration is significantly reduced, making these projects more attractive for private investment on appropriate terms.

1.12 Typically, a geothermal project can take from five to ten years to be developed and undergoes the following stages: (i) pre-investment studies: studies are conducted to start identifying potential sites for exploration including the analysis of existing literature and data, if available, as well as geologic, geophysics and geochemistry studies and analyses commonly known as 3G's; (ii) drilling phase: once potential sites for exploration have been selected, the developer starts drilling to confirm the existence of a geothermal resource, its exact location, and its ability to support a geothermal plant of a certain capacity. A drilling program can include drilling slim-hole[9] and/or full-scale[10] exploratory wells; (iii) field

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

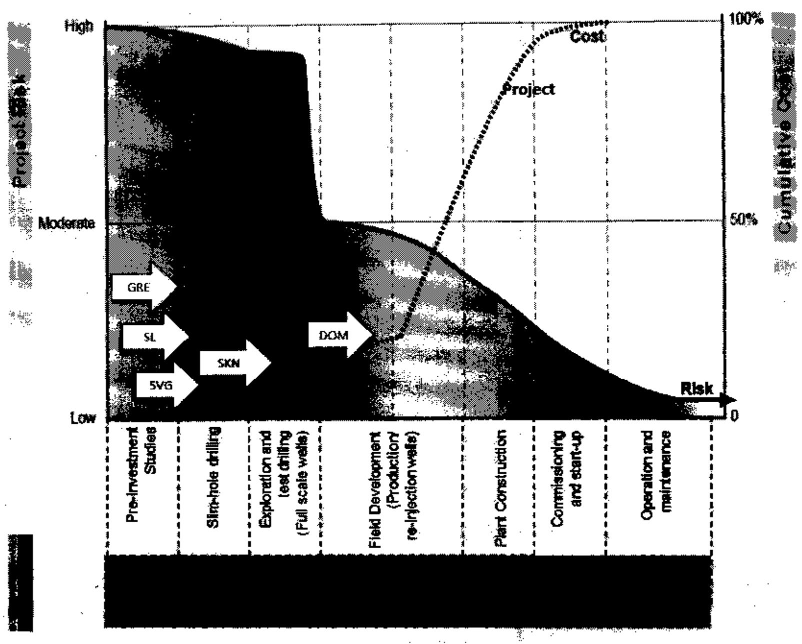
[8] Unlocking Geothermal Power: How the Eastern Caribbean Could Become a Geothermal Powerhouse. IDB 2017.

[9] Slim-hole wells are holes with a diameter that is no wider than 15 centimeters (cm) that require a smaller drilling equipment than larger diameter wells do and therefore are generally less costly to drill.

[10] Full-scale exploratory wells are 20cm or more in diameter and require mobilizing heavy drilling equipment.

development: with the results of the drilling program the developer can complete project design and move ahead with drilling the production and re-injection[11] wells required to meet the capacity of the plant as designed; (iv) plant construction: the power plant is built including the installation of the steam gathering system to connect and move the steam from the production wells to the plant and the geothermal fluids from the plant back to the re-injection wells; (v) commissioning and start-up: during this stage the plant starts operating in order to resolve any issues with the contractors and ensure that the plant is delivered according to specifications; (vi) operation and maintenance: after plant completion has been deemed satisfactory, the plant as well as the steam field will be operated and maintained on an ongoing basis. Figure 2 shows the different stages in GE development as briefly described above, and the cost and risk associated to each.

Figure 1: GE Development Stages and Risk Profile



Source: Energy Sector Management Assistance Program (ESMAP), 2012, with author's changes

1.13 Among the array of financial instruments that comprise the SEF Program, CRG allows for shifting some of the risks away from the project developer. Initially provided as a grant to fund drilling activities, a CRG will convert to a loan if geothermal resources are proven in adequate quantities and quality to support the construction and operation of a geothermal power plant.[12]

1.14 **Rationale for participation of both private and public sector.** GE development faces special challenges that require active participation of both the

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[11] Re-injection wells return the geothermal fluids to the reservoir after having been used to generate power. This allows the fluids to be reheated again in the reservoir and maintains reservoir pressure.

[12] The OM of the program will define the criteria for determining successful and unsuccessful drilling as well as the percentage of investment required from the private sector sponsors.

governments and the private sector, ideally through Public Private Partnership (PPP) arrangements. As shown in Table 3, the estimated investment requirements to develop GE in the five ECC exceed US$600 million. Investments of this magnitude cannot be undertaken by the public sector alone. Not only are governments in the ECC already highly indebted (¶1.20) but they also lack the specialized knowledge, expertise, and experience required to develop this energy source. Hence a PPP would allow governments participation in and ownership of a strategic asset without having to bear the entire financial burden associated with financing the required investment.

Table 3: Investments Required for GE Development by Stage in the Five ECC

	Stage									Cost Transmission & Distribution $MM	Total Cost $MM
	Pre-Investment			Exploration			Field development				
	Studies	Slim hole/ wells (#)	Cost $MM	Full scale wells (#)	Cost $MM	Production /re-injection wells	Cost $MM	Cost steam gathering $MM	Cost Power Plant $MM		
DOM	done	done	$0.0	done	$0.0	done	$7.0	$15.0	$30.0	$15.0	$67.0
SVG	done	skip	$0.0	2	$14.0	3	$21.0	$15.0	$30.0	$16.3	$96.3
GRE	done	2	$6.0	2	$14.0	3	$21.0	$15.0	$30.0	$16.3	$102.3
SL	done	2	$6.0	2	$14.0	6	$42.0	$25.0	$56.0	$16.3	$159.3
Nevis	done	done	$0.0	2	$14.0	3	$21.0	$15.0	$30.0	$12.1	$92.1
St. Kitts	done	2	$4.0	2	$14.0	3	$21.0	$15.0	$30.0	$16.3	$100.3
Total		6	$16.0	10	$70.0	18	$133.0	$100.0	$206.0	$92.3	$617.3

1.15 Additionally, the risk profile of geothermal development is front-loaded (¶1.12) making bankability of the exploratory stage of GE projects extremely difficult. Costly investments in drilling and testing of exploratory wells are required, amid high uncertainty, to prove the capacity of the geothermal resource to support the construction and operation of a power generation plant at a viable electricity cost. Most private investors are either not willing to assume the resource risk associated with exploratory drilling or, if they are, they place a high premium on their equity contributions due to the risks involved. Public sector participation in funding the exploration stages directly and/or by mobilizing multilateral grant and concessionary debt financing in support of GE development can go a long way in de-risking projects and mobilizing private sector investments.

1.16 **Sustainable Energy Facility (SEF) Program.** The SEF-Expanded complements the SEF-2015 by increasing the funds available for GE development in five ECC with resources from the Green Climate Fund (GCF)[13] for which the IDB applied and obtained approval in October 2016. The SEF-Expanded also includes co-financing resources from the Republic of Italy (REI) mainly for exploratory drilling. Figure 1 below shows how SEF-Expanded resources will be added to the total pool of resources already available under the SEF-2015 enabling the SEF Program to: (i) provide a larger share of the investment needs for GE development in the region; and (ii) provide more risk mitigation instruments for GE projects, unlocking private investment.

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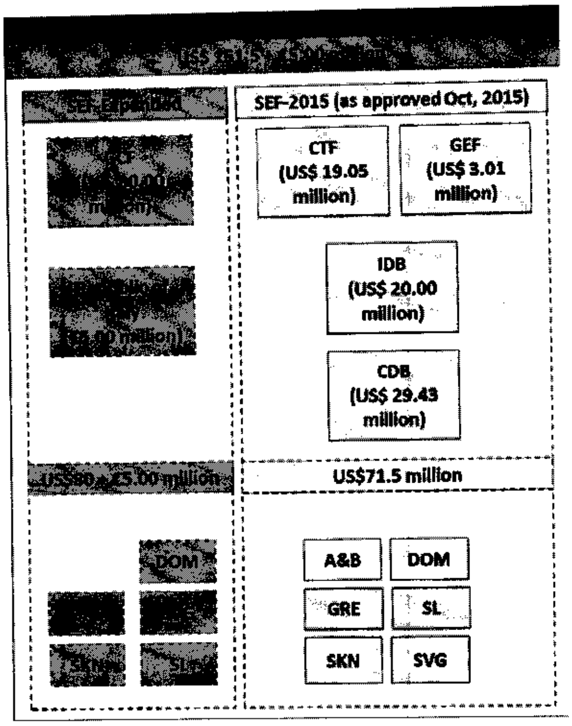
[13] The GCF is a fund within the United Nations Framework Convention on Climate Change (UNFCCC) which contributes to global efforts to combat climate change. The IDB was accredited in July 2015 to act as channel through which GCF will deploy its resources to developing countries.

Figure 3: SEF Program Resources (SEF-2015 & SEF-Expanded)



1.17 The SEF Program is structured as a credit line to the CDB by which IDB provides loans and grants financed by IDB's and other donors' resources. All these resources will be provided by the CDB as loans and/or grants to sub-projects in the ECC. The program will provide financing according to demand by beneficiaries, as each of the five ECC applies to CDB for funding to complete the different geothermal development stages. Program financing will also consider and be complementary to efforts currently undertaken by other donors in support of GE in the ECC (¶1.17).

1.18 Resources approved under SEF-2015 total US$71.5 million including: (i) loans from IDB Ordinary Capital (OC) (US$20 million); (ii) Contingent Recovery Grants (CRG)[14] from the Clean Technology Fund (CTF) (US$19.05 million); (iii) grants from the Global Environment Facility (GEF) (US$3.01 million); and (iv) local counterpart resources from the Caribbean Development Bank (CDB) (US$29.43 million). SEF-Expanded provides additional resources as follows: (i) loans from GCF (US$60 million); (ii) CRG from GCF (US$20 million); and (iii) grant resources from the REI (€4.75 million)[15]. While SEF-2015 resources are available for all six ECC and to support EE and RE broadly, SEF-Expanded resources are available only for GE development and hence, only five of the ECC can access this funding.

[14] CRG are grants that CDB can offer to the GE developer for exploratory drilling which will be converted into a loan in case the exploration is successful but don't have to be repaid in case exploration fails.

[15] This amount is net of administrative fees. The contribution from the Government of Italy (REI) will be received in euros and immediately converted into US dollars (US$) and executed/disbursed in US$.

1.19 Since the preparation of the SEF-2015, its indicative project pipeline was developed as a list of EE, intermittent RE, and GE projects identified by CDB and IDB and expected to apply for program funding during the eight years of SEF-2015 execution (2016-2023). Due to the program's on-demand nature, this pipeline is periodically reviewed by CDB and IDB to reflect the latest market developments in the ECC, the progress in SEF-2015 execution, and any additional resources mobilized either by CDB or IDB in support of program objectives. Consequently, the latest update of the Indicative Pipeline was done in September 2017 to include the indicative allocation of SEF-Expanded resources among the GE projects and ECC already in the pipeline (see Revised SEF Program Project Pipeline).

1.20 Consistent with the risk profile of GE development depicted on Figure 2, exploration risk mitigation and technical assistance resources are expected to be disbursed earlier during program execution. These resources allow countries to fund their drilling programs and mitigate risks for GE developers until there is enough certainly as to the existence and quality of the geothermal resource. Only then can loan resources be used for financing field development and plant construction phases. Therefore, grants and CRG (CTF, GEF, GCF) are mostly frontloaded while loans (IDB, GCF) are backloaded as shown in Table 4 below.

Table 4: SEF Program: Projected Disbursements and Commitments by Source (in US$ millions unless otherwise indicated)[16] [17]

Operation	Source	2016	2017	2018	2019	2020	2021	2022	2023	End of Project	
SEF-2015	CTF	-	-	9.50	-	5.25	4.30	-	-	**19.05**	**71.50**
	GEF	0.03	0.10	1.06	1.33	0.33	0.16	-	-	**3.01**	
	IDB	-	-	-	1.84	4.67	4.30	2.30	6.90	**20.01**	
	CDB	0.02	2.78	9.71	10.71	6.15	0.02	0.02	0.02	**29.43**	
SEF-Expanded	GCF	-	-	7.65	35.77	21.35	15.23	-	-	**80.0000**	
	REI	-	-	2.22	2.22	1.11	-	-	-	**5.5575**	
SEF Program		**0.05**	**2.88**	**30.14**	**49.65**	**38.86**	**24.01**	**2.32**	**6.92**	**157.0575**	

1.21 **SEF-2015 progress.** Since reaching eligibility in April 2016, the SEF-2015 has shown progress in terms of resource commitments[18]. As of August 31, 2017, CDB has approved six funding operations with SEF-2015 resources: (i) three EE operations totaling US$16.58 million funded by CDB loans and grants to finance streetlight retrofitting in A&B and SKN and EE investments in SVG; (ii) two GEF-funded capacity building grants to SVG and GRE in amounts of US$0.161 million and US$0.571 million, respectively; and (iii) a US$9.5 million CTF funded CRG for GE exploration in SVG. As shown in Table 5 , a total of US$26.81 million (37% of the financing) in loans and grants have been approved by CDB. Additional CDB counterpart resources funded by grants from other donors in the

[16] This table shows the disbursement projections for the program which are based on: (i) actual SEF-2015 commitments as of August 31, 2017, and (ii) expected SEF-2015 and SEF-Expanded approvals during program execution (see Revised SEF Program Project Pipeline).

[17] The Dollar/Euro exchange rate used for estimating the Total Program Cost is 1.17 US$/EUR (as of October 26, 2017).

[18] Resource commitments entail the approval by CDB's Board of funding operations.

amount of £4 million (pounds sterling)[19] have been committed for slim-hole drilling in SVG (not included in the table below).

Table 5: SEF-2015 Allocated vs. Committed Resources as of August 2017 (US$ millions)

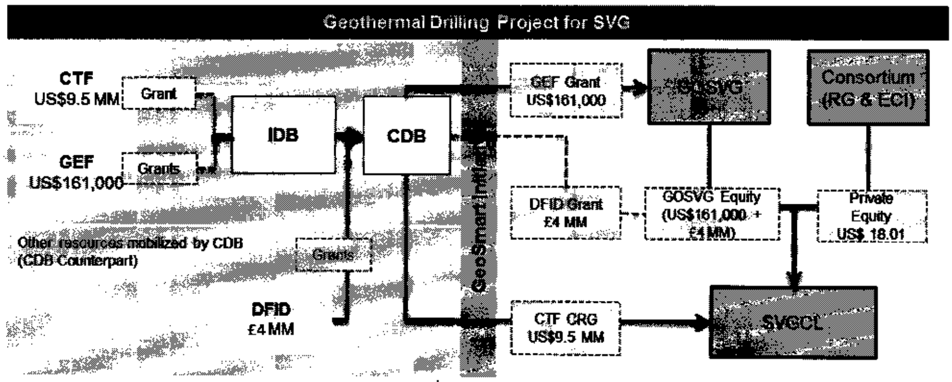
	IDB		CTF		GEF		CDB		Total	
Country	Alloc.*	Com.**	Alloc.*	Com.**	Alloc.*	Com.**	Alloc.*	Com.**	Alloc.*	Com.**
A&B	-	-	-	-	1.02	-	7.19	6.99	8.22	6.99
DOM	-	-	-	-	-	-	8.62	-	8.62	-
GRE	3.46	-	-	-	0.84	0.57	3.20	-	7.50	0.57
SKN	9.20	-	9.55	-	-	-	6.00	5.80	24.75	5.80
SL	-	-	-	-	-	-	0.20	-	0.20	-
SVG	7.34	-	9.50	9.50	0.93	0.16	3.98	3.78	21.76	13.44
All ECC	**20.00**	**-**	**19.05**	**9.50**	**2.80**	**0.73**	**29.20**	**16.58**	**71.05**	**26.81**
Project Mgmt/Eval	-	-	-	-	0.21	-	0.24	-	0.45	-
CDB	-	-	-	-	-	-	-	-	-	-
Total SEF	**20.00**	**-**	**19.05**	**9.50**	**3.01**	**0.73**	**29.44**	**16.58**	**71.50**	**26.81**
% Com./Alloc.	[illegible]		50%		[illegible]		[illegible]		[illegible]	

* Alloc. - Total resources allocated under the SEF (updated as of August, 2017)

** Com. - Total resources committed by the CDB (updated as of August, 2017)

1.22 The first GE sub-project funded by CDB using a combination of SEF-2015 resources was a Geothermal Drilling Project for SVG approved on May 16, 2016. In this operation, CDB bundled grants and CRG to enhance the capability of Saint Vincent Geothermal Company Limited (SVGCL)[20] to make an evidenced-based determination of the viability of the geothermal resource in the La Soufriere region. The objective of the project is to determine the feasibility of continuing geothermal resource development for power generation. The operation comprised: (i) grant funding provided by United Kingdom Department for International Development in the amount of £4 million which will be used by the government of SVG to contribute to the capital of SVGCL; (ii) US$161,000 allocated from GEF resources to assist the government in financing consultancy services of a community liaison officer for the project; and (iii) a CRG to SVGCL of $9,500,000, allocated from CTF resources to finance drilling services for the exploratory drilling program. Figure 5 below shows how the three sources of funding were combined by CDB and made available to SVGCL for financing the drilling program in SVG.

Figure 2: SEF Program Funding Operation - Drilling Project for SVG



[19] £4 million equivalent to US$5.6 million at an exchange rate of 0.71 £/US$.

[20] SVGCL is a special purpose vehicle formed by the Government of SVG, Emera Caribbean and Reykjavik Geothermal.

1.23 Once the existence of a geothermal resource and its suitability to support a power plant is independently certified, the next step for funding this sub-project will be triggered. On the one hand, the CRG will convert to a loan repayable over a period of up to 12 years, following a grace period of two years which covers the construction phase of the geothermal plant. Simultaneously, SVGCL is expected to apply to CDB for support for the construction of the plant. Loans from IDB and GCF through the SEF Program will be used for this purpose at that stage. In SKN and GRE, CDB is in dialogue with stakeholders to support both governments in exploratory drilling, while in DOM, conversations have taken place to analyze the funding of a transmission line for the geothermal project to the end users.

1.24 **Lessons learned.** The main lesson learned from execution of the SEF-2015 is that PPA negotiations are complex and require timely support to ECC governments who must engage with private sector developers. With this in consideration, the SEF-Expanded includes under Component 2, resources which can be executed directly by CDB, to provide the support ECC governments need to negotiate effectively and partner with the private sector.

1.25 **GeoSmart Initiative (GSI).** CDB is coordinating its efforts to mobilize resources from different donors for supporting GE development under the umbrella of the GSI. GSI is a branding effort that allows CDB to draw from resources available for GE support in the ECC and coordinate with a multiplicity of beneficiaries and donors. As the regional development bank, CDB is the best suited to engage with beneficiaries and coordinate with other donors. Initial funding came through SEF-2015 and will be complemented by the SEF-Expanded. However, CDB and IDB will continue to mobilize additional resources under CDB-GSI by seeking financing from various donors, funds and bilateral facilities.

1.26 **Coordination and leveraging effect with other donors**. Both IDB and CDB have played an instrumental role in engaging different donors that can support the region's GE development. The SEF Program has the potential to leverage a total of at least US$7.8 per dollar of IDB's ordinary capital resources. Efforts are ongoing to continue to mobilize resources from other donors as required as well as to coordinate with other donors who are already engaged in the region's efforts with GE. The Donor Coordination Annex presents the main actors engaged in GE in this region and the way the SEF Program is coordinating with them. For instance, the package of funding approved by CDB for the GE project in SVG is complementary to a US$15 million loan from the International Renewable Energy Agency and the Abu Dhabi Fund for Development for which the country had already been declared eligible. Similarly, as CDB engages DOM and SL, both countries that have been receiving technical cooperation support from the World Bank (WB) to develop their GE potential, CDB will be looking for ways in which GSI can complement efforts already underway.

1.27 **CDB as a borrower of IDB's resources.** On January 27, 1977, the IDB Charter was amended to allow the IDB to provide financial resources to the CDB to support the development of its members[21]. On September 28, 1977, the IDB and the CDB entered an agreement setting forth the general standards applicable to

[21] The resources and facilities of the IDB can be used to finance the development of any of the members of the CDB by providing loans and technical assistance to that institution.

operating relations between both institutions[22]. Since then, the IDB has financed six global loans[23] to the CDB totaling US$134 million where resources were on lent by the CDB to projects in the ECC.

1.28 The proposed financing to the CDB complies with all three criteria (compatibility, complementarity, and additionality) as set forth in the Bank's Operational Policies and Strategies Manual (OP-601: Relationship with Sub-Regional Financial Institutions - General Policy). Regarding compatibility, a review of CDB policies and operational practices shows that CDB policies and strategies are consistent with those of the Bank's, predicated on consistent principles. While the CDB does not have an equivalent Public Utilities Policy (PUP) (GN-2716-4), this operation was designed taking into consideration the principles of IDB's PUP: (i) each sub-project will be financially sustainable as it will generate, though the electricity tariff charged to final users, sufficient funds to meet the financial commitments and the operational and maintenance costs of the systems related to the operation; and (ii) each project will achieve environmental and social sustainability. Regarding complementarity between CDB and IDB, since the Bank cannot lend directly to the ECC (not member countries of the Bank), the CDB provides the channel for Bank assistance to support the social and economic development of these countries. Finally, regarding additionality, this loan has a multiplier effect with regards to financial resource flows to the sub-region and will increase the level of resources that the CDB could provide to the beneficiary countries.

1.29 **The GCF.** The GCF was established at the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties 16 held in Cancun in 2010 as an international fund created to support low-emission and climate-resilient investments in developing countries. The mandate of the GCF is to make a significant and ambitious contribution to combating climate change by promoting a paradigm shift towards low-emission and climate-resilient development pathways. The GCF has established a results management framework, which includes eight strategic impacts to be achieved at the GCF level – four in mitigation and four in adaptation. The Mitigation Strategic Impacts of the GCF are intended to reduce emissions from energy generation and access; transport; forest and land use; as well as buildings, cities, industries and appliances.

1.30 **The IDB and the GCF**. The Accreditation Master Agreement (AMA) between the GCF and the IDB (AMA), was approved by IDB's Board of Directors on July 26, 2017 and signed on August 29, 2017. Upon signature of the AMA, the IDB became the first multilateral development bank to complete Stage III accreditation to the GCF and begin the implementation of projects. Moreover, this accreditation allows the IDB to access resources from the GCF to support technical cooperation, investment grant, loan and guarantee operations and to unlock US$511 million of GCF Board pre-approved IDB project proposals. One of such projects is the SEF-Expanded.

[22] All IDB operations with the CDB are in accordance with the three fundamental principles defined in the IDB'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.

[23] The SEF-2015 (3561/OC-RG), currently in execution, is the last of these operations to have been approved.

1.31 **GCF Board of Executive Directors approval of the SEF-Expanded.** Funding proposals are approved by the GCF Board before the project is approved by the IDB. IDB's full funding proposal for the SEF-Expanded was circulated for consideration by the GCF Board of Directors in September 2016[24]. Prior to that, and in line with the GCF's no-objection procedure[25], IDB obtained, through the CDB, a no-objection from the National Designated Agency (NDA) of each of the five ECC. With GCF Board approval granted in October 2016, and as per GCF project cycle, IDB now must prepare and seek internal approval of the proposal, in accordance with its own policies and procedures, and the considerations and requirements set forth in the investment framework and results management framework of the GCF[26]. Upon approval of the proposal by IDB, the individual Funded Activity Agreement (FAA) between the GCF and IDB (Contribution Agreement) will be prepared and signed. As per GCF procedures, an FAA will be negotiated for each individual project describing the terms and conditions applicable to the individual project and may be negotiated in tandem with the due diligence process and internal approval processes of the GCF and the Executing Agency (EA), and then signed after all the internal approvals have been obtained. Only thereafter, after signing and complying with the conditions of the FAA, GCF resources for projects can be transferred to the EA.

1.32 **Strategic alignment.** All sub-projects financed by CDB through this operation will comply with strategic alignment metrics homologous to the IDB's. All operations will be mapped to the specific CDB country strategy with each of their ECC borrowers and to IDB's institutional priorities as outlined in the Updated Institutional Strategy 2010-2020 (AB-3008). Each sub-loan and/or sub-grant contributes to the development challenges of: (i) Productivity and Innovation, by reducing the cost of electricity generation thus increasing economic competitiveness; and (ii) Economic Integration[27], by financing GE development in countries that could export electricity to neighboring islands; and aligns to the cross-cutting themes of (a) Climate Change and Environmental Sustainability, by replacing fossil fuels with a renewable and clean energy source thus reducing carbon emissions; and (b) gender and Diversity, as xxx, and (c) Institutional Capacity and Rule of Law, by providing support to CDB and the ECC governments to strengthen institutional capacity for developing GE.

1.33 This operation contributes to the achievement of the GCF's objectives and result areas, and has a mitigation focus (reducing emissions from energy access and generation).

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24 As per the GCF project cycle, voluntary concept notes may be submitted to the GCF Secretariat for feedback and recommendations prior to the submission of a full funding proposal. IDB submitted its Concept Note to the GCF Secretariat in July 2015. The GCF Secretariat carried out due diligence and verified the proposal's: (i) compliance with GCF's interim environmental and social safeguards, gender policy and financial policies; and (ii) performance against the criteria for project and program funding. Additionally, the Technical Advisory Panel independently assessed the proposal's performance against activity-specific criteria.

25 An Accredited Entity may submit a proposal to GCF only in conjunction with a no-objection letter signed by the official representative of the NDA or focal point of the beneficiary country (including in the case of multi-country proposals).

26 The GCF Initial Results Management Framework (GCF/B.07/04) outlines initial logic models and performance measurement frameworks of the GCF.

27 The program has been evaluated using the Bank's Sector Strategy to Support Competitive Global and Regional Integration (GN-2565-4) framework, to analyze and validate the project's contribution to the regional cooperation and integration financing goal (see Regional Integration Annex).

B. Objective, Components and Cost

1.34 The objective of the SEF-Expanded is to reduce the financial, technical and institutional barriers which GE development encounters in the five (ECC) with GE potential, DOM, GRE, SKN, SL and SVG, and to provide institutional strengthening and capacity building to the governments of these ECC and to the CDB for GE development. The SEF-Expanded includes the following components:

1.35 **Component 1 – GE Investments (US$81 million):** will support GE projects as they advance through successive stages of development all the way to plant construction by offering funding under:

1.36 **Sub-component 1.1 – Prefeasibility and Exploration Drilling (US$20.68 million).** Financed by US$4.45 million from the non-reimbursable technical cooperation grant provided by REI for doing pre-feasibility studies and US$16 million investment contingent recovery grants from GCF (RG-G1013) for exploratory drilling.

1.37 **Sub-component 1.2 – Field and plant development (US$60 million).** Financed by investment loan resources from GCF (RG-L1112), this sub-component will support field and plant development through the provision of concessional loans for the drilling of production and reinjection wells, engineering and construction of steam gathering systems and power plants, as well as for the construction of power substations and transmission lines.

1.38 **Component 2: Technical Assistance: Regulatory framework, institutional strengthening, capacity building, and studies (US$5.17 million).** Financed by a US$4 million grant from GCF (RG-G1013) and US$1.1075 million from the grant provided by REI. This component will provide non-reimbursable resources to the CDB to strengthen its capacity to implement the program, and to the five ECC, including their ministries responsible for energy and electric utilities to develop an effective legal, policy and regulatory framework for the implementation of GE projects, as well as to make progress in negotiations with private sector actors to develop GE. To this end, resources will support the preparation of: (i) surface studies including geology, geophysics and geochemistry (3Gs); (ii) Environmental and Social Impact Assessments (ESIA); (iii) studies on the feasibility of power interconnections between neighboring islands; (iv) studies on the feasibility of transmission and distribution lines to bring GE to market; and (v) technical, legal, financial, and economic advisory services for governments and CDB to advance GE project preparation and implementation (¶2.12).

1.39 The cost of the SEF-Expanded operation is estimated at US$85,557,500 of which US$80 million will be financed by the GCF, and US$5.5575 million (US$ equivalent of €4.75 million) by the REI. No additional CDB counterpart resources are considered because US$29,435,000 have already been approved under the SEF-2015. The total cost of the SEF Program is therefore estimated at US$157,056,198. While Table 6 shows the total cost of the SEF-Expanded by source and component, Table 7 shows the total cost of the SEF Program by source and provides the indicative allocation by country (¶1.5).

Table 1: Cost of the Program by Source and Components (in US$ millions)[28]

	SEF-Expanded				
	GCF			REI	Total SEF-Expanded
Component	RG-L1112 (loan)	RG-G1003 (inv. grant)	RG-G1003 (grant)	RG-G2015 (grant)	
1. GE Investments	60.00	16.00	-	4.4500	80.4500
2: Technical Assistance: Regulatory framework, institutional strengthening, capacity building, and studies	-	-	4.00	1.1075	5.1075
Proj.Mgmt/Eval	-	-	-	-	-
Total	**60.00**	**16.00**	**4.00**	**5.5575**	**85.5575**

Table 2: SEF Program Cost by Source – Indicative Allocation by Country (in US$ millions)

	Total SEF Program (SEF-2015 + SEF-Expanded)										
	SEF-2015					SEF-Expanded					
	IDB	CTF	GEF	CDB	Total SEF-2015	GCF			REI	Total SEF Expanded	Total SEF [illegible]
Country	RG-L1071 (OC loan)	RG-G1009 (inv. grant)	RG-G1004 (inv. & TA grant)	(loans & grants)		RG-L1112 (loan)	RG-G1003 (inv. grant)	RG-G1003 (grant)	RG-G1015 (grant)		
A&B	-	-	1.02	7.19	8.22	-	-	-			
DOM	-	-	-	8.62	8.62	5.00	-	0.50			
GRE	3.46	-	0.84	3.20	7.50	7.35	10.00	0.50	5.5575	84.5575	155.6077
SKN	9.20	9.55	-	6.00	24.75	20.55	6.00	1.00			
SL	-	-	-	0.20	0.20	6.45	-	0.50			
SVG	7.34	9.50	0.93	3.98	21.76	20.65	-	0.50			
All ECC	**20.00**	**19.06**	**2.80**	**29.20**	**71.05**	**60.00**	**16.00**	**3.00**	**5.5575**	**84.5575**	**155.6077**
Proj.Mgmt/Eval	-	-	0.21	0.24	0.45	-	-	-	-	-	0.4485
CDB	-	-	-	-	-	-	-	1.00	-	1.0000	1.0000
Total SEF	**20.00**	**19.05**	**3.01**	**29.44**	**71.50**	**60.00**	**16.00**	**4.00**	**5.5575**	**85.5575**	**157.0562**

C. Key Results Indicators

1.40 **Expected results.** Given that the SEF-Expanded resources will allow the SEF program to provide a larger share of the total capital required to develop GE in the five ECC, the Results Matrix developed for the SEF-2015 has been updated for SEF-Expanded. While the SEF-2015 represented approximately 11% of total estimated GE investment needs, this percentage increases to 25% for the SEF Program after the injection of SEF-Expanded resources. Thus, the consolidated program will catalyze the development of GE sub-projects improving the conditions that make GE possible in each country.

1.41 The SEF Program is expected to result in: (i) the development of up to 60MW of GE generation capacity; (ii) a reduction of GHG emissions estimated at 375,930 tCO_2/year[29]; and (iii) a reduction of 722,000 barrels/year of imported oil products. Another expected result is having a reduction of the average electricity

[28] The Dollar/Euro exchange rate used for estimating the total program cost is 1.17 US$/EUR (as of October 26, 2017).

[29] The SEF-2015 contemplated a reduction in CO_2 emissions of 375,930 metric tons per year of which 313,421 correspond to the GE projects in the five ECC.

generation cost, which if passed on to customers, results in a reduction of the electricity tariff from US$0.33/kWh in 2015 to US$0.27/kWh.

1.42 **Results indicators**. The expected results and outputs, which include CTF[30] and GCF[31] core outcome indicators, are detailed in the SEF-Expanded Results Matrix (see Annex II). The program incorporates in its components, elements which will contribute to the achievement of the first strategic gender objective[32] of empowering women economically by facilitating access to economic opportunities and promoting women's entrepreneurship. The Results Matrix includes the corresponding gender indicators (see Gender Annex).

1.43 **Economic viability**. A Cost Benefit Analysis was developed for each of the sub-projects identified in the program's Revised Indicative Pipeline. The GE sub-projects have an aggregate Economic Net Present Value (ENPV) of approximately US$167 million and all of them are financially and economically viable; the Economic Internal Rate of Return (EIRR) is greater than 12% for all GE sub-projects.[33] A sensitivity analysis was conducted and indicates that the program's economic viability is maintained despite changes in the values of some key variables.[34]

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30 In addition to project success indicators that track validation of the resource base, the leverage achieved by the donor funds, and the ability of the project to achieve financial closure, core indicators relevant to CTF include: volumes of GHG avoided and MWh generated.

31 The GCF mitigation performance measurement framework includes three core indicators (M.1: Tons of greenhouse gas emissions produced, M.2: Cost per ton of CO2-equivalent reduced, and M.3 Volume of public and private funds catalyzed by the GCF) that would be applied to all mitigation interventions. Also, due to the focus of the intervention, IDB recommended other indicators from the GCF list (3.1: Annual energy savings (GWh) as a result of GCF interventions, and 6.1: MW of capacity from low-emission sources).

32 Implementation Guidelines for the IDB's Operational Policy on Gender Equality in Development.

33 The lowest EIRR among the sub-projects analyzed is 14.4%.

34 For GE projects, the ENPV falls from US$167 million in the base case to US$66 million when the price for monetizing carbon emissions decreases by 40% and the capital expenditures increase by 20%. ENPV falls from US$167 million in the base case to US$62 million when there is a 20% reduction in oil prices with respect to the U.S. Energy Information Administration 2015 reference projection.

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financing Instruments

2.1 The SEF-Expanded will be a GCL chargeable to GCF resources administered by the IDB according to the AMA. The GCL will be complemented with resources from The REI administered by the IDB according to the Contribution Agreement to be signed between the IDB and REI.

2.2 Grant resources from the GCF may be used by the CDB to finance GE sub-projects under the following two modalities: (i) as a CRG where the CDB offers a grant to the GE developer for exploratory drilling which will be converted into a loan in case the exploration is successful[35]; and (ii) as guarantees to the sub-loans provided by CDB to the beneficiary for exploratory drilling. If the drilling is deemed unsuccessful, the resources of the grant will be used to repay the sub-loan.

2.3 **Resource allocation**. SEF-Expanded resources will be used for the financing of GE sub-projects by the CDB in the five ECC that meet the eligibility criteria set forth in the OM (¶2.3). ECC countries will have equitable opportunity of access to SEF Program resources which will be available on a first-come first-served basis, provided that: (i) a minimum of three countries receives funding; and (ii) no single country receives more than 50% of program resources.[36]

2.4 The CDB, with input from IDB will determine which sub-projects will receive funding from the SEF Program based, among other factors, on the countries' development priorities and on the CDB's internal programming processes and following the rules and procedures established in the OM. The Revised Indicative Pipeline was last updated in September 2017 and presents not only the updated resource availability, having added SEF-Expanded resources to those already available under SEF-2015, but also updated information on GE sub-projects expected development timelines.

2.5 Sub-projects may be financed by the CDB either from one source of funding or a combination of them. This will be determined by the CDB with input from IDB in the context of each sub-project based on the criteria and guidelines set in the OM of the program. Financing instruments will be structured in a way to incentivize private sector participation.

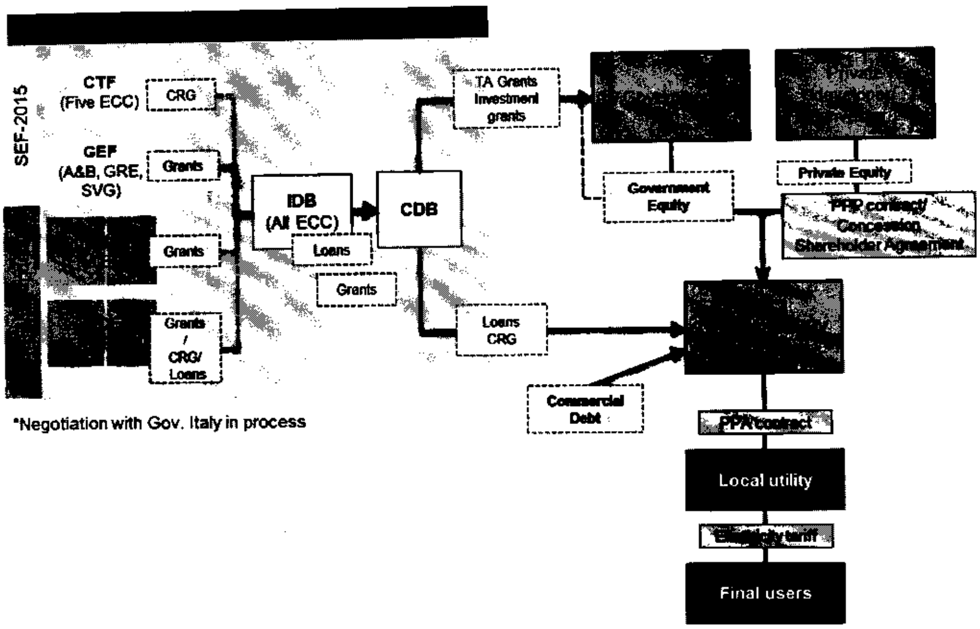
2.6 GE sub-projects ideally will be structured as legally established PPP. Eligibility criteria are elaborated in the OM; however, the minimum requirements sub-projects must comply with to access program funding are: (i) having a results matrix that includes project impact, outcome and output indicators, with baseline data and targets; and (ii) having an ESIA and meeting the social safeguards criteria, as noted (¶2.7). Figure 6 shows the mechanism by which the SEF

[35] The OM of the program will define the criteria for determining successful and unsuccessful drilling as well as the percentage of investment required from the private sector sponsors.

[36] This amount is based on the cumulative expenditure needed to complete at least one geothermal investment starting from exploratory drilling.

Program will make resources available to GE projects in the region structured as a joint venture between the government and the private sector developer.

Figure 6: SEF Program Lending and On-lending Structure



2.7 GE eligible projects should have a contractual[37] and/or regulatory mechanism in place that allows concessionality granted to them to be reflected in the Power Purchase Agreement to be signed with an off-taker, in order to reflect as much as possible, the concessionality granted in the electricity tariffs to final users.

B. Environmental and Social Safeguard Risks

2.8 As a GCL, this operation is classified for its environmental and social impact as a Financial Intermediary (FI) 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 sub-projects currently contemplated to be part of the SEF-Expanded include high risk operations. As such, this project is classified as a high risk FI (FI-1).

2.9 The construction impacts for GE projects represent the more significant risks, which can include: (i) potential contamination of soil and ground water by drilling mud; (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; (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; (viii) soil erosion and loss of vegetation; and (ix) potential impacts to thermal features; and potential impacts to marine habitat and

[37] If the regulation for GE exploration and exploitation are not in place, then the contracts between CDB and GE PPP should include the necessary provisions to compensate for the lack of regulations.

fauna. 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.

2.10 Due to the high-risk nature of these sub-projects, the Bank will engage the CDB in a "hand-in-hand" Environmental, Social and Governance (ESG) due diligence process on all geothermal sub-projects, providing final sign off and closely monitoring project implementation with the support of an external consultant. In addition to this agreed due diligence process requirement, the Bank will require as part of the loan contract to be entered into between the Bank and the CDB that the latter complies with all applicable local environmental, social, health and safety, and labor regulatory requirements, and in relation to the financing of sub-projects with IDB's proceeds ensure that each sub-project complies with: (i) CDB's ESG policies and review procedures; (ii) in-country regulations; (iii) IDB's list of excluded activities; (iv) fundamental principles of the rights at work; and (v) the International Finance Corporation Performance Standards and applicable WB environmental, health and safety guidelines. For Category A GE projects financed with SEF-Expanded resources the ESIA will be disclosed to the public at least 120 days prior to Board Consideration by the CDB. For further details on the possible risks and impacts, due diligence process stages and risk management mechanisms, and contractual requirements, please refer to the Environmental and Social Management Report (ESMR).

C. Fiduciary Risk

2.11 The fiduciary risk of the project has been assessed as low mainly due to the adequacy of the CDB's organization structure and procedures for fiduciary management, its demonstrated capacity in the fiduciary management of projects, and the overall low risk of the CDB's operational performance.

2.12 The CDB is an Aa1 rated financial institution (according to Moody's August 2017 update) indicating its obligations are judged to be of high quality and subject to very low credit risk. Its status was upgraded from that in 2015 which, according to related reports[38] described CDB's business profile as strong and reflected in its role as "the cornerstone lender" to Caribbean governments and its "extremely strong financial profile", reflected through its strengthening capital adequacy, its less diversified funding profile, and its solid liquidity.

D. Other Key Issues and Risks

2.13 **Institutional capacity to implement the SEF Program.** Both ECC governments and the CDB have a limited track record structuring and financing PPP arrangements and geothermal projects. For this not to affect the execution and effectiveness of the SEF Program Component 2 of SEF-2015 and now Component 2 of SEF-Expanded will ensure the transfer of technical expertise to develop local competencies as well as the availability of specific training and advisory services as required by the CDB and the governments.

[38] Standard & Poor's Ratings Services provides high-quality market intelligence in the form of credit ratings and in its May 7, 2015 report on the CDB confirmed its "Stable" outlook and affirmed CDB's "AA/A-1+" status on long and short term foreign currency ratings.

2.14 CDB's capacity to implement the SEF-2015 was bolstered since the beginning of its execution by retaining an expert consulting firm to provide support in GE project appraisal. Moving forward, and with the SEF-Expanded resources coming online, CDB will continue to strengthen its capacity by retaining four different consulting firms to: (i) provide legal advisory services to GE projects; (ii) perform environmental and social impact assessments and studies for GE projects; and (iii) provide specialized geothermal advisory services and (iv) provide specialized economic and financial advisory services[39], in accordance with terms of reference agreed with the Bank, to be executed by the CDB on behalf of the ECC beneficiaries.[40] However, on a case by case basis, CDB may elect to have the beneficiary country contract the services.

2.15 The availability of specialized advisory services for CDB and the ECC governments will also mitigate the following development risks: (i) negotiations of the Power Purchase Agreements (PPA) by which local utilities will purchase power from GE projects could be complex and lead to delays in program execution; and (ii) local technical experience with geothermal is not enough to accompany the pace of development of GE projects.

2.16 **Feasibility of GE projects and materialization of expected results.** Exploratory risk might deter private investments or increase the cost of capital to levels that don't allow for the reduction of power generation costs. The program addresses this by: (i) providing grants to support governments in the pre-investment phase ensuring that there is enough technical and scientific information for governments and private investors to make sound investment decisions; (ii) providing risk mitigation instruments to fund exploratory drilling reducing the risk for project developers; (iii) providing concessional funding to reduce the overall cost of capital for GE projects; and (iv) requiring that GE projects have a contractual and/or regulatory mechanism that reflects the concessionality granted through this program in PPAs.

2.17 **Enabling legal and regulatory frameworks.** There is a risk that because not all countries have developed specific RE and GE legislation and regulation, it will be harder to establish a PPP and move forward with GE projects in the region. To mitigate this risk the OM will define a requirement for GE sub-projects to include, in the absence of supporting legislation and regulation, provisions in the PPP contracts defining: (i) the process for granting a license to develop geothermal resources and assigning responsibility for monitoring geothermal resources to a government body; and (ii) the tariff setting mechanism that will allow the electric utility to recover the cost of service regardless of the technology or fuel used to generate power, while reflecting any reductions in the costs of electricity generation. Notwithstanding the latter, Component 2 will provide support to governments to make the necessary changes to the legal and regulatory frameworks.

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[39] Based on lessons learned from SEF execution, it is very important to provide support for facilitating initial public-private engagement for negotiation of the Power Purchase Agreements.

[40] Unless explicitly requested by the CDB Borrowing member country provided there is ample evidence the country has the capacity and readiness to execute the resources in a timely fashion.

III. Implementation and Management Plan

A. Summary of Implementation Arrangements

3.1 **EA.** The CDB will be the borrower and the EA of the SEF-Expanded, as it is the EA of the SEF-2015, through the Renewable Energy and Energy Efficiency Unit and will work in close collaboration with IDB and other donors. Individual GE sub-projects will be implemented by legally established PPPs, in accordance with the criteria set forth in the OM.

3.2 **Financial structure.** The CDB has two sources of funding for its borrowing members: (i) OC resources financed from equity contributions, market borrowings and income; and (ii) Special Funds Resources (SFR). The SFR comprises several funds, the largest of which is the Unified Special Development Fund, while all other funds together are referred to as the Other Special Funds (OSF). The GCF loan resources will be managed and accounted for as part of the OSF. The GCF grant resources and the grants provided by the REI will be administered as non-reimbursable financing.

3.3 **Disbursements and commitment period.** It is expected that the sub-loans financed with resources from GCF will have a five-year disbursement period. The latter is the period for the sub-loan agreements to be signed. As sub-loans financed by the CDB are implemented, the CDB will present disbursement requests to the Bank based mainly on the reimbursement of payments made and the advance of funds mechanisms. Advances from IDB to CDB will be disbursed based on the liquidity needs of the program within a six-month period. Except for the first advance of funds, the CDB will have to present a justification for the use of at least 70% of the total cumulative balances pending justification, and the Bank approve such justification. The GCF grant will have a disbursement and execution period of six years and the REI Project Specific Grant will have a disbursement and execution period of five years.

3.4 **Execution and administration.** The provisions governing program execution, including the use of program resources and eligibility of each financial instrument to be used on a sub-project by sub-project basis, will be established in the SEF Program OM and agreed by the IDB and CDB. The OM has already been developed and approved by CDB and IDB for the SEF-2015. However, it will have to be updated to reflect the SEF-Expanded resources and to include operating guidelines for the proper fulfillment of the obligations of the Bank under the AMA and the FAA. Such operating guidelines will address, among others, the additional and special monitoring and reporting requirements described in the AMA (AMA5.5). **It is a special contractual clause prior to the first disbursement of the loan and grant resources for the Beneficiary to present evidence that the OM of the SEF-2015 has been updated, including sub-loan/sub-grant model agreements, and the operating guidelines for the proper fulfillment of the obligations of the Bank with the donors, in accordance with the terms and conditions previously agreed upon between the CDB and the Bank.** This is crucial to establish the guidelines and procedures that should be followed by the Executing Agency to secure the successful execution of the program.

3.5 **Special Contractual Clauses of execution prior to the first disbursement of each sub-loan, the Borrower shall submit to the Bank a final draft appraisal report prepared by the Borrower, including the final financial structure for the respective sub-project and the regulatory framework developments, if applicable, in terms satisfactory to the Bank. Prior to the first disbursement of each sub-project financed as contingent recovery grant or guarantee, the Beneficiary shall submit to the Bank (i) a copy of the signed agreement between the Beneficiary and the developer for the first sub-project, in terms satisfactory to the Bank; (ii) the final draft appraisal report, including the final financial structure for the respective sub-project and the regulatory framework developments, if applicable, in terms satisfactory to the Bank.** These conditions are important to fulfill the technical, environmental, financial, sustainability of the sub-loans to comply with both IDB and GCF requirements

3.6 **Project cycle.** The executing mechanism which is summarized here will be fully described in the OM. To begin the project cycle, every sub-loan including CRG would require a two-page concept note and a non-objection from the IDB to move forward. A final non-objection will be requested prior to CDB's board approval. For activities under Component 2, the CDB will use grant agreements to provide non-reimbursable technical assistance to ECC governments except when executing these resources directly on behalf of the beneficiary or when used for the strengthening of CDB's capacity to implement the program (¶1.41). It is expected that as part of program execution, the IDB project team will be continuously monitoring the development of the GE sub-projects and providing the required support to the CDB to facilitate their execution.

3.7 **Procurement of goods and services.** Given the consistency of CDB procurement policies with those of the IDB (GN-2349-9 and GN-2350-9), it is recommended that the CDB uses its own procurement policies for operations receiving financing from this global loan. IDB policies require that funds from Bank loans be used only for procurement of activities contracted with firms or individuals of IDB member countries. Therefore, as with previous global loans to the CDB, 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 or administered by the Bank. Since the program is mainly demand-driven, and sub-projects (loans, CRG and grants) will be identified during execution, the proposal does not include a Plan of Activities, a Pluriannual Execution Plan, or a Procurement Plan (see Annex III).

3.8 **External control and reporting.** Given the consistency of the CDB financial management policies and procedures with those of the IDB and in accordance with the Bank's Financial Management Guidelines OP-273-6, external audit requirements will be met through: (i) submission of the Annual Audited Financial Statements (AFS) of the CDB. These reports are to be presented to the Bank within 180 days following the end of CDB's fiscal year end.[41] It should be noted

[41] CDB's fiscal year end is December 31st; also, CDB's financial rules dictate that its AFS may not be released until approved by the Board of Governors at its annual meeting held in May of each year.

that in accordance with OP-273-6, a longer due date, as compared to the Bank norm of 120 days, is being requested since the project will utilize the financial management system of the CDB; (ii) submission of an assurance report on the process of preparation and submission of disbursement requests. These reports will be conducted by an independent audit firm that is eligible to the Bank, and the report submitted within 180 days following the end of CDB's fiscal year end. The CDB may utilize the services of its auditors, once they are eligible to the Bank; and (iii) submission of semi-annual unaudited financial reports of the SEF-Expanded including financial status reports on sub-loans. These statements should be submitted within 60 days after the close of each semester. These statements are intended to supplement the information in CDB's AFS since the AFS do not include project specific information (see Annex III).

B. Summary of Arrangements for Monitoring Results

3.9 The CDB will monitor and supervise operations based on their policies and procedures and provide IDB with the necessary information for IDB to monitor and evaluate the program as well as to comply with its reporting obligations to the GCF and the REI (see Monitoring & Evaluation Plan (M&E)).

3.10 **Progress reports**. The results of CDB's monitoring and supervision will be reported to the Bank through Semi-Annual Progress Reports (SAPR) submitted no later than 60 days after the end of each semester. Because sub-projects can be financed from one source of funding or a combination of them including sources approved under SEF-2015 as well as those under SEF-Expanded, CDB will produce SAPR comprising both operations, the SEF-2015 and the SEF-Expanded together. These SAPR will indicate the degree of fulfillment of the output indicators and progress toward the results and outcomes of the Results Matrix, making it possible for the Bank to monitor these indicators using the Bank's Project Monitoring Report. They will also include for each individual sub-project: (i) a report on its consistency with the eligibility criteria, as well as environmental and social safeguards criteria as detailed in the OM, and the IDB's GCI-9 priority lending targets; (ii) CDB financial statements of the individual sub-project and summary updates on its situation, the problems encountered and measures taken to address them; and (iii) data on the impact, outcome and output indicators of the individual sub-project as defined by the CDB in the sub-project's Results Monitoring Framework approved by its Board of Directors. The latter will be based on information in the CDB's Project Supervision Reports, copies of which will be annexed to the reports.

3.11 **Midterm review.** After four years from the date of the first disbursement of the SEF-2015, a midterm review will be conducted by the CDB, as detailed in the M&E Plan, comprising both the SEF-2015 and the SEF-Expanded.

3.12 **Project Completion Report (PCR).** A PCR will be prepared evaluating the impact and results obtained by the SEF Program and each sub-project completed. As part of the PCR an ex post cost benefit analysis of the program will be developed. It is recommended that the PCR be conducted once 100% of the program is completed including both SEF-2015 and SEF-Expanded. The PCR will include the progress in meeting the program results as defined in the Results Matrix, information on the execution of the program and lessons learned.