

TC DOCUMENT

I. BASIC INFORMATION

▪ Country/Region:	Central America and the Caribbean Region
▪ TC Name:	Support for Cofinancing of Renewable Energy and Energy Efficiency
▪ TC Number:	RG-T2480
▪ Team Leader/Members:	Christiaan Gischler (INE/ENE) Team Leader; Shohei Tada (INE/ENE) Co-Team Leader; Adriana M. Valencia (INE/ENE); Carlos Echeverria (ENE/CGY); Héctor Baldivieso (ENE/CNI); Carlos Echevarria (ENE/CCR); Lumas Kendrick (ENE/CJA); Carlos Jacome (ENE/CHO); Camila González (INE/ENE); Haydemar Cova León (INE/ENE); Emiliano Detta (INE/CCS); and Escarlata Baza (LEG/SGO)
▪ Taxonomy:	Research and Dissemination
▪ Date of TC Abstract authorization:	September 19, 2014
▪ Beneficiary:	Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Dominican Republic, Belize, The Bahamas, Barbados, Jamaica, Guyana, Trinidad & Tobago, Suriname, Antigua and Barbuda, Dominica, Saint Lucia, St. Kitts and Nevis, St. Vincent and The Grenadines, and Grenada
▪ Executing Agency:	The Inter-American Development Bank (IDB) through the Energy Division (INE/ENE)
▪ Donors providing funding:	Fund for the Financing of Technical Cooperation for initiatives for Regional Infrastructure Integration (FIRII)
▪ IDB Funding Requested:	US\$1,150,000
▪ Local counterpart funding, if any:	US\$287,500
▪ Disbursement period:	48 months
▪ Required start date:	February 2015
▪ Types of consultants:	International consulting firm and individual consultants
▪ Prepared by Unit:	INE/ENE
▪ Unit of Disb. Responsibility:	INE/INE
▪ Included in Country Strategy (y/n);	No
▪ TC included in CPD (y/n):	No
▪ GCI-9 Sector Priority:	Climate change, Integration, and supporting development in small and vulnerable countries.

II. OBJECTIVES AND JUSTIFICATION

- 2.1 Electricity generation in most countries in Central America (CA) and the Caribbean (CB) depends on imported liquid fossil fuels (diesel and fuel oil), and is vulnerable to high and volatile international oil prices. In CA, the power sector has contributed to the increase in oil

consumption in the region due to a substantial increase in the participation of fossil fuels in the generation mix during the last decades (from 18% in 1990 to 42% in 2010), resulting in high generation costs. In the CB, the cost of electricity generation is even higher because of the cost of imported fuels and system inefficiencies. Due to the limited size of these isolated markets, region has one of the highest electricity tariffs in the world. In 2012, the average electricity tariff in the CB was US\$0.33 per kWh while in Florida, USA, the average tariff was US\$0.11 per kWh.¹ In CA, average regulated electricity rates were of US\$0.18/kWh in 2011.²

- 2.2 Integration can play a key role in reducing dependency on fossil fuels, and mitigating the negative impact of climate change in CA and the CB. On one hand, the lack of economies of scale and relative isolation of CB countries forces dependency on fossil fuels. On the other hand, CA has shown progress in addressing energy challenges within a framework of regional dialogue and cooperation through, for example, the Interconnection System for Central American countries (SIEPAC).
- 2.3 To support the transformation of the energy sector in CA and CB, the Inter-American Development Bank (IDB) has established partnerships with multiple donor countries to set up financing facilities and make resources available to CA and CB for the financing of private and public sector projects in the areas of renewable energy (RE), energy efficiency (EE), and low carbon technologies.
- 2.4 On January 26th, at the Caribbean Energy Security Summit in Washington, D.C., the Prime Minister of the Republic of Trinidad and Tobago (GORTT), Kamla Persad-Bissessar, proposed the creation of a US\$ 1 billion dollar Caribbean Energy Fund for CARICOM Member States in partnership with the IDB and on February 19th, the IDB and the GORTT signed a Memorandum of Understanding (MOU) for the creation of the Energy Co-financing Facility for Caribbean Sustainability (ECFCS). The goal of the Multi-donor Facility is to support the transformation of the energy sector in the Caribbean to increase energy security, reduce vulnerability, increase competitiveness and foster economic growth and social wellbeing.
- 2.5 The Bank has also signed an MOU with Japan on January 14, 2011, and a Framework Agreement (FA) (GN-2656) on March 16, 2012, where the Cofinancing for Renewable Energy and Energy Efficiency (CORE) is established. CORE is a cofinancing mechanism between the Japan International Cooperation Agency (JICA) and the IDB to support CA and the CB countries in addressing high dependency on fossil fuels and the negative impact of climate change, by promoting RE and EE. As of March 2014, cumulative JICA commitments under the CORE exceeded US\$600 million; a US\$17 million JICA and a US\$35 million IDB loans were approved in 2013 and 2012 respectively for Nicaragua's National Sustainable Electrification and Renewable Energy Program (PNESER) III (NI-L1063); and a US\$645 million JICA loan was approved in 2013 for Costa Rica's Guanacaste Geothermal Program (CR-1070), establishing the CORE as an effective scheme for providing financing for the promotion of RE and EE.
- 2.6 In March 2014, both parties agreed on an amendment to the MOU and its FA to increase the amount of JICA cofinancing up to US\$1 billion, as well as to extend eligible countries to uppermost middle income countries. As of the date of this TC document, countries and institutions eligible for funding under the CORE are: Guatemala, El Salvador, Honduras, Nicaragua, Dominican Republic, Belize, Jamaica and Guyana, Costa Rica, Panama, Suriname, Dominica, St. Lucia, St. Vincent and Grenadines, Grenada, and the Caribbean Development

¹ Castalia (2014). "Caribbean Regional Energy Integration Assessment: Scenarios and Opportunities." Report to IDB.

² CEPAL (2012) *Centroamérica: Estadísticas del Subsector Eléctrico* 2011.

Bank (CDB). Under such renewed MOU and FA, both parties will continue promoting RE and EE in CA and the CB regions meeting the need for support as is the case with geothermal development in Eastern Caribbean countries, EE programs for the public sector, RE and regional interconnection in Belize, RE and EE programs in El Salvador, strengthening of hydropower in Honduras, among others.

- 2.7 The general objective of this TC is to reduce dependency on fossil fuels in CA and the CB regions by facilitating countries' decision making and regional coordination regarding investments in RE and EE and supporting the identification and preparation of RE and EE projects that could access co-financing through the ECFCS and CORE mechanisms, and other IDB funds that support energy projects in CA and CB.
- 2.8 This TC will build over existing Bank interventions in the area of EE and RE. When analyzing national and regional contexts and potential integration infrastructure investments, it will make use of the information developed for the SIEPAC, which involved the construction of a 1,788 km transmission line from Mexico to Panama and the establishment of the *Mercado Eléctrico Regional* (MER). It will also make use of information generated by the "Natural Gas in the Caribbean - Feasibility Studies" (RG-T2243) and "Updating of the Strategy for the Introduction of Natural Gas in Central America" (RG-T2385), which are exploring the possibility of introducing Natural Gas to CA and the CB regions. Finally, this TC will coordinate efforts with the regional TC "Substitution of Fossil based Electricity Generation with Renewable Energy in Central America and the Caribbean" (RG-T2376), which focuses on fossil fuel substitution projects and performs analyses to determine the technical and financial feasibility of potential projects for RE substitution in eligible countries in CA and the CB regions. While RG-T2376 has a focus on subsidizing pre-investment studies for private firms interested in transitioning from fossil fuel based to renewable generation, this TC will target both EE and RE and provide support for governments to bridge gaps in resource potential assessments and develop pre-investment studies for selected projects.
- 2.9 Either by developing regional infrastructure or interconnecting countries' electricity grids in some places, bundling carbon emissions reductions and purchases of RE and EE equipment, or sharing expertise and best practices across the region, integration efforts are well suited to address the dual challenge of climate change mitigation and the energy sector's overdependence on fossil fuels. Thus, this operation is consistent with the scope of the FIRII (GN-2344-8) as expressed in paragraph 3.13 of the Fund's bylaws³.
- 2.10 The operation is also aligned with the IDB's institutional priorities as outlined in the Report on the Ninth General Increase in the Resources of the IDB (GCI-9) (AB-2764) as it contributes to the goals of supporting: (i) development in small and vulnerable countries; (ii) regional integration (through assessing potential investments in energy infrastructure in the region); and (iii) climate change initiatives, renewable energy and the environment, which includes the 'need to increase the knowledge base, strengthen frameworks and build capacity.' In addition, the TC is in line with the Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (GN-2609-1), and the Caribbean Strategic Agenda on Integration (SAI)⁴.

³ "The expected outcome [...] is to help the countries in the preparation of good integration projects including the economic, social and environmental perspectives."

⁴ 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.

III. DESCRIPTION OF ACTIVITIES/COMPONENTS AND BUDGET

- 3.1 **Component I. Baseline and RE and EE potential survey.** This component will finance studies to determine the potential for RE and EE programs in selected country(s) in the CA and CB regions, by determining the relevant baselines and identifying potential projects that could be undertaken. The countries considered in both regions vary in the degree to which they have already developed a baseline and identified their EE and RE potential. Belize, for instance, has finished in 2014 its EE and RE baseline with IDB's support (RG-T1886 - Assessment of the potential for Distributed Generation using Renewable Energy and Energy Efficiency). Other countries like Guatemala, Honduras, El Salvador, Guyana, Suriname and some Eastern Caribbean countries, have not yet developed such baseline, which this component intends to help countries build. Therefore, this component will: (i) identify the level of progress towards completing EE and RE resource assessments in the beneficiary countries; (ii) complete resource assessments⁵ provided the activity is requested by the governments of the respective countries, and (iii) identify potential EE and RE projects in the beneficiary countries ensuring the information required to conduct the pre-investment studies financed by Component II of this TC is available. This information includes but is not limited to: (i) size (MW) of RE added or EE savings; (ii) estimated CAPEX and OPEX; (iii) type of technology; (iv) whether it is to be implemented by the public or the private sector. At a minimum, the beneficiaries will include: (i) three beneficiary countries; and (ii) at least one CA and one CB country. Priority will be given to countries with a higher percentage of fossil fuel contribution to the energy matrix and those that have policies already in place to promote EE and RE.
- 3.2 The component's output is a list of potential projects with an estimation of the potential cost savings that using EE and RE could generate. In identifying the potential projects, consideration will be given to regional or integration as well as national EE and RE projects both in the private and public sectors. A cost benefit and a readiness analysis will be used to assign priorities among the potential projects.
- 3.3 Resource assessment studies developed will include the following activities; (i) developing baseline information for the existing energy matrices (identifying sources, uses and users, generation costs and key players), for electricity consumption, distribution and generation, as well as for CO₂ emissions; (ii) identifying local and regional stakeholders involved, and developing a baseline for institutional capabilities and current regional cooperation efforts around energy and climate change; (iv) identifying existing financial mechanisms to promote EE and RE; (v) identifying technical, financial, legal, and institutional bottlenecks for the promotion of RE and EE; (vi) assessing the potential of EE and RE financial savings by conducting energy audits to evaluate energy savings by user group⁶ due the implementation of EE practices, standards and technologies; (vii) assessing the potential for RE⁷ (solar, wind, geothermal, hydro and other possible RE sources) for electricity generation, estimating in each case generation cost (US\$/MWh of energy delivered, and US\$/MWh of installed capacity) for potential RE generation and comparing it to current generation costs; and (viii) identifying a set of potential projects prioritized by doing a cost benefit analysis and a readiness assessment.

⁵ The team will make use of information developed under TC RG-T2376 to avoid overlap regarding RE potential assessments

⁶ Residential, commercial, industrial, public sector

⁷ Close coordination is required with TC RG-T2376 so as to avoid overlap in doing RE baseline studies, pre-investment studies, and analyses in general regarding RE potential and projects.

- 3.4 **Component II. Pre-investment studies.** This component will finance the studies required to determine the feasibility of the EE and RE projects identified in Component I. Building on [potential projects already identified by ENE](#) and the results obtained from Component I, CID and CCB, with the technical support of ENE, will lead the dialogue with beneficiary countries to identify which of the potential projects identified will be eligible to receive resources to finance pre-investment studies. Pre-investment studies financed by this component will serve as input for identifying and preparing future Bank operations in both regions provided the activity is requested by the governments of the respective countries. The outputs of this component are pre-investment studies for a set of Prioritized Projects. The component comprises the following activities to be developed for all EE and RE Prioritized Projects: (i) perform a technical viability assessment; (ii) conduct a complete financial and economic analysis including, for integration projects, an evaluation of the benefits and synergies obtained through a regional integration approach rather than a country-based one; (iii) estimate the impact on key macroeconomic parameters such as public debt to GDP ratio, fiscal balance, public deficit as a percentage of GDP, current account balance, level of foreign reserves, among others; and (iv) perform social and environmental studies.
- 3.5 The Prioritized Projects will include: (i) at least two of the projects identified in component I; (ii) only projects that would be implemented by the public sector or through Public-Private Partnerships (PPPs); and (iii) at least one CA project and one CB project. Priority will be given to projects with a better Economic Rate of Return (ERR) as determined in the studies performed by Component I.
- 3.6 **Component III. Development of action plans for capacity building, institutional strengthening and regional coordination.** This component will provide resources to design action plans aimed at achieving an adequate institutional setting at the national and regional levels, for the development of identified EE and RE potential in CA and CB. Its outputs are action plans for capacity building, institutional strengthening and coordination for those Prioritized Projects as defined in Component II. The component comprises the following activities: (i) assess the human resources, legal and institutional framework, and budget required to develop the Prioritized Projects selected in Component II; (ii) assess the training and capacity building requirements at a national level to enable participation in cross-border and regional programs; (iii) identify other donors or stakeholders involved in providing support for capacity building, institutional strengthening, and coordination for the development of EE and RE projects and recommend ways in which to collaborate and/or leverage those efforts; (iv) design a set of institutional strengthening activities in EE and RE to implement at a national and regional level; (v) design and prepare capacity building and institutional strengthening plans; (vi) identify national and regional level actions needed to tap into the identified EE and RE potential; and (vii) design and prepare regional coordination protocols, if required, to develop the identified EE and RE potential.
- 3.7 **Component IV. Dissemination of findings and stakeholder engagement.** This component will finance outreach activities required to ensure the necessary stakeholder engagement, awareness and participation for the execution of this TC. The outputs of this component are: (i) a stakeholder communications plan; and (ii) national and regional workshops. The component comprises the following activities: (i) design a stakeholder communications plan for CA and the CB; (ii) hold workshops with relevant stakeholders to present, discuss and

disseminate the findings and results obtained during and from the execution of this TC as defined in the stakeholder communications plan.

Table 1: Indicative Results Matrix

Result Indicators	Units	Base Line	Goal	Means of Verification
1a. EE and RE assessment studies developed	# studies	0	At least 3	Study's Final report(s) and TC semi-annual progress report (SAR)
1b. Project identification list developed	# lists	0	1	
2. Pre-investment studies developed	# studies	0	At least 1 in CA and 1 in CB	Study's Final report(s) and SAR
3. Capacity building, institutional strengthening and coordination action plans	# documents	0	2	Action Plan Document and SAR
4. Regional Stakeholder Communications Plan designed	# plans	0	1	Communications Plan Document and SAR
5. Number of national and regional institutions to be strengthened	# institutions	0	At least 5	Action plan document and SAR

- 3.8 **Budget.** The total cost of this TC is US\$1,437,500, to be financed by the Fund for the Financing of Technical Cooperation for Initiatives for Regional Infrastructure Integration (FIRII), including in-kind local counterpart resources amounting to US\$287,500⁸.

Table 2: Indicative Budget (US\$)

Component	IDB Funding		
	IDB Funding (FIRII)	Local counterpart (in kind)*	Total TC Funding
I. Baseline and potential survey	440,000	110,000	550,000
II. Pre-investment studies	440,000	110,000	550,000
III. Development of action plans for capacity building, strengthening and coordination	100,000	25,000	125,000
IV. Dissemination of findings and stakeholder engagement	55,000	42,500	97,500
Project management	115,000		115,000
TOTAL	1,150,000	287,500	1,437,500

- 3.9 To complement the objective of the TC and increase the number of beneficiaries, JICA will provide parallel funding to countries eligible under CORE in the amount of US\$1,150,000. These resources, administered by JICA directly, will finance consulting services that are similar in scope but additional to those that the IDB will perform under components I, II, and IV to support the preparation of RE and EE projects that could access financing through the CORE mechanism. This TC will accomplish its desired outcomes independently of whether the JICA executes its resources as planned.

Component	Parallel funding from JICA
I. Baseline and potential survey	500,000
II. Pre-investment studies	500,000
IV. Dissemination of findings and stakeholder engagement	150,000

⁸ Local Contribution: The beneficiaries will share the financial costs of the implementation of the TC by an amount to be decided on a case-by-case basis. Such contributions may be provided in kind and shall not be lower than twenty percent (20%) of the total cost of the TC.

Component	Parallel funding from JICA
TOTAL	1,150,000

IV. EXECUTING AGENCY AND EXECUTION STRUCTURE

- 4.1 The IDB, through the Energy Division (INE/ENE) will be responsible for the selection and hiring of consultancy services under this TC. The IDB and JICA will coordinate closely, discussing and sharing the terms of reference used to hire firms and consultants, as the case may be, and any additional information necessary to generate complementarities and avoid duplication of work. A part-time Program Manager (PM), to be based in one of the participating countries, will be hired under this TC to facilitate its execution, coordinate activities and provide semi-annual progress reports to the IDB.
- 4.2 Prior to the execution of the Project activities in the selected beneficiary countries, the Bank shall obtain the corresponding no-objection as well as in-kind commitments from the respective authorities in each country.
- 4.3 The IDB's statutes require the Bank to work with and through the CDB in cases where the OECS countries, which are not IDB-members, are direct beneficiaries of Bank funds. In this operation, however, the bulk of the proposed financing is directed toward activities that will provide common benefits to all beneficiary countries, including both IDB members and non-members. The portion of the funds that is directed exclusively toward non-member countries represents a small ("de-minimis") amount, which will not be greater than 10 percent of the total cost of this TC. In such cases, a direct technical or financial CDB role in the Project is not foreseen under existing Bank rules.
- 4.4 The project team will contract individual consultants and firms in accordance with current Bank procurement policies and procedures.

V. MAJOR ISSUES

- 5.1 The coordination risk due to the project having multiple beneficiaries will be mitigated by hiring a PM, who will manage the execution of the components and activities, and centralize the communication among different stakeholders. The risk of duplication of work given the number of different IDB and other donor initiatives for the promotion of EE and RE in CA and CB will be mitigated by researching (Component I) current work being done by the IDB and other donors in EE and RE for each of the beneficiary countries.

VI. EXCEPTIONS TO BANK POLICY

- 6.1 This project does not call for any exception to Bank policy.

VII. ENVIRONMENTAL AND SOCIAL CLASSIFICATION

- 7.1 There are no envisioned environmental or social risks associated with this operation. According to the Environment and Safeguards Compliance Policy (OP-703), this TC has been classified as category C. No environmental assessment studies or consultations are required for Category "C" operations. For documents resulting from the use of the toolkit please see: [Safeguard Policy Filter Report \(SPF\)](#) and [Safeguard Screening Form \(SSF\)](#).

Required Annexes:

- Annex I: [Terms of Reference](#)
- Annex II: [Procurement Plan](#)