

TC DOCUMENT
Support for CARILEC's Climate Change Adaptation and Sustainable Energy Programming (RG-T2382)

I. BASIC INFORMATION FOR TC

▪ Country/Region:	Caribbean
▪ TC Name:	Support for CARILEC's Climate Change Adaptation and Sustainable Energy Programming
▪ TC Number:	RG-T2382
▪ Team Leader/Members:	Team Leader: Gerard Alleng (INE/CCS); Alternate Team Leader: Lumas Kendrick (ENE/CJA), Team Members: Sara Valero (INE/CCS), Emiliano Detta (INE/CCS), Javier Bedoya (LEG/SGO), and Milagros de Pomar (INE/CCS).
▪ Date of TC Abstract authorization:	September 10 th 2013
▪ Beneficiary:	The Caribbean Electric Utility Services Corporation (CARILEC)
▪ Executing Agency and contact name:	The Caribbean Electric Utility Services Corporation (CARILEC), Allison Jean, Executive Director
▪ Donors providing funding:	Fund for the Sustainable Energy and Climate Change IDB Special Program (SCI) ¹
▪ IDB Funding Requested:	US\$476,625
▪ Local counterpart funding, if any:	US\$120,000
▪ Disbursement period (which includes Execution period):	22 months (18 months of execution)
▪ Required start date:	January 6th, 2013
▪ Types of consultants:	Firms and individual consultants
▪ Prepared by Unit:	INE/CCS
▪ Unit of Disbursement Responsibility:	CBA
▪ TC Included in Country Strategy (y/n):	N
▪ TC included in CPD (y/n):	N
▪ GCI-9 Sector Priority:	The project contributes to the following GCI-9 lending targets (i) supporting development in small and vulnerable countries and (ii) climate change, sustainable (including renewable) energy, and environmental sustainability

II. OBJECTIVES AND JUSTIFICATION OF THE TC

2.1 The Caribbean Region continues to experience the adverse effects of rising oil prices on electricity costs and the resulting negative impact on its economy. As a result of being comprised mainly of small island developing states (SIDS), the region is also very

¹ Single Window Procedures deemed that other resources were not available for funding, SECCI Fund Eligibility Minutes are available (IDBDOCS #38048364).

vulnerable to the adverse effects of climate change. In the past few years there have been a number of initiatives in the region that have attempted to mitigate the economic impacts of the rising fuel and electricity costs and to reduce the risks posed by climate change and the burning of fossil fuels.

- 2.2 While these efforts have had some small measure of success, stakeholders agree that significantly more needs to urgently be done. In 2009, the Bank, through its Climate Change and Sustainability Division (INE/CCS), provided funding to The Caribbean Electric Utility Services Corporation (CARILEC) for the project “Energy Efficiency and Renewable Energy Project for CARILEC” (RG-T1639), which was successfully executed and was completed in December 2012. The project focused on enhancing CARILEC’s capability to assist in improving efficiency and promoting the use of renewable energy technologies and alternative fuels among its members in the Caribbean region. This support provided has helped CARILEC to set the foundation for some of its plans and targets but there is much more to be done.
- 2.3 The proposed operation will support CARILEC in the development and implementation of: (i) climate change adaptation strategies for its electric utilities; and (ii) strategies for optimizing generation, transmission and distribution with increased renewable energy (RE) penetration and reduction of operational losses of its members. This will support the Bank’s efforts to strengthen and enhance the region’s capacity to adopt climate change adaptation strategies and regional integration of energy efficiency (EE) and RE efforts within the electricity sector.
- 2.4 The proposed Technical Cooperation (TC) contributes to the following GCI-9 lending targets: (i) supporting development in small and vulnerable countries (GN-2616-2); and (ii) climate change, sustainable (including renewable) energy, and environmental sustainability; and also to the IDB’s Integrated Strategy for Climate Change Adaptation and Mitigation and Sustainable Renewable Energy (GN-2609-1) and its Action Plan (2012-2015 GN-2609-3), specifically its strategic lines to “reduce the GHG footprint of the energy matrix and promote energy efficiency consistent with the Sustainable Energy Guidelines of the Bank, including supporting low-carbon power, deployment of world class renewable energy sources and energy efficiency;” and “Smart infrastructure solutions that reduce climate change impacts of infrastructure works.”

III. DESCRIPTION OF COMPONENTS, ACTIVITIES AND BUDGET

- 3.1 **Component 1 - Adaptation to Climate Change Action Plan and Strategies.** This Component will develop an action plan and adaptation strategies to improve resilience to the impacts of climate change for selected utility members of CARILEC (utilities plant, equipment and infrastructure so as to ensure sustainability of the electricity utility). This will include the development of detailed investment options for selected utilities in order to support their investment programs for becoming more resilient to the impacts of climate change as well as to improve their business continuity and overall efficiency. An assessment will be undertaken in order to address the impacts of climate change specifically on the electricity sector in the utilities’ service area. It will examine the sector’s vulnerability to climate change and identify options to increase the sector’s climate resilience and will provide a set of recommendations on how best decision-makers can integrate climate change into business plans and operations. It will also propose options in which utilities can ensure environmental sustainability.

- 3.2 The development of the adaptation plan for selected utilities will involve:
- An assessment of the impacts of climate change on the electricity sector based on different climate scenarios (infrastructure: generation, transmission and distribution, demand, etc.). A quantification of the magnitude of expected and/or avoided losses from these impacts will be carried out as part of this activity.
 - Determination of the adaptation measures that could be deployed to improve the resilience of the utilities' operations (e.g., improvement of weather and climate information, the introduction of climate adaptation strategies and technologies). A cost benefit analysis of adaptation measures will be undertaken.
 - Explore mechanisms to facilitate the implementation of the adaptation measures (e.g. use of public private partnerships (PPP), where appropriate policy changes required) within the utilities' service area.
 - Assess the co-benefits of adaptation and environment sustainability of the adoption of low carbon technologies (renewable energy resources) and energy efficiency measures within the utilities' operations.
- 3.3 **Component 2 - Strategies for Supply-side Energy Management.** This component seeks to identify areas for specific investment opportunities involving both investor-owned and government-owned utilities, and will include strategies for the evaluation and introduction of the supply-side management techniques, including: (i) supply side energy audits at selected member utility companies - it is envisaged that the results from these audits will lead to investment opportunities as it is expected that CARILEC member utilities will commit to implementing some of the recommendations of the audits up to a pre-approved maximum financial value; (ii) the introduction of energy management strategies to mitigate price shocks and improve environmental performance; and (iii) analysis and strategies for the deployment of smart-grid technologies. The status of member utilities' smart grid transitioning efforts will be assessed, the ways in which these can be enhanced will be explored and the associated costs and benefits will be evaluated; the specific smart-grid priorities that could be implemented in the region in the short, medium and long term will be explored and the associated costs and benefits will be estimated; the barriers to the deployment of smart-grid technologies including the enabling environment (the policy, regulatory, institutional and legal frameworks, including the required codes and standards) will be investigated; and finally, the human and institutional capacity at the sector level to support the the deployment of Smart-Grid technologies will be assessed.
- 3.4 **Component 3 - Strategies for Demand-side Energy Management:** Based on the Benchmarking Studies conducted under Phase I (RG-T1639), this component will seek to develop a demand side management program which will provide detailed direction regarding areas in which the utility can improve technical and environmental performance. These efforts will include: (i) demand side energy audits through the selected utilities' service territories with the specific objective of promoting load-shaping objectives (peak-load reduction, load shifting, or off-peak load building) and energy efficiency and demand-response measures. These initiatives will be translated into pilot projects in five selected utilities which will identify an energy audit team that comprised of representatives from a research institution, the respective utility, other utilities, the regulator and government. The composition of the energy audit team will be the decision of the respective utility, however,

the audit team should comprise at least two individuals from other utilities to facilitate knowledge transfer and sharing; (ii) developing a mechanism for establishing Energy Services Company (ESCO) services among CARILEC's member utilities; (iii) development of a model Energy Performance Agreement (EPA); and (iv) investigation of regulatory and financing strategies for the recovery of investments in energy efficiency programs.

3.5 **Component 4 – Dissemination of Information.** This component envisions the implementation of at least one workshop for CARILEC members (e.g. at CARILEC's CEOs annual meeting to disseminate the information produced under the program), together with the presentation of a technical paper at a major regional conference focusing on the subject matter of this technical cooperation.

3.6 **Project coordinator.** A technical resource person with project management skills will be contracted as a Project Coordinator for 18 months to assist with overseeing all the activities developed under this proposal.

Indicative Results Matrix

	Unit	Baseline		Year 1		Year 2		Expected Completion Date	Data Source
		Value	Year	Planned	Actual	Planned	Actual		
Number of Climate Change Adaptation Action Plan and Strategies developed	#	0	2014						
• # of detailed investment options for selected utilities identified	#	0	2014	2		3		2015	
Number of Supply-side Energy Management Strategies developed	#	0	2014						
• # of supply-side energy audits undertaken	#	0	2014	5		0		2014	
• # of analysis for deployment of smart-grid technologies undertaken	#	0	2014	5		0		2014	
Number of Demand-side Energy Management Strategies developed	#	0	2014						
• # of demand-side energy audits undertaken	#	0	2014	5		0		2015	
• # of Energy Performance Agreement models developed	#	0	2014	0		1		2015	
• # of studies on strategies to recover investments in energy efficiency programs carried out				0		1		2015	
Number of knowledge dissemination programs designed	#	0	2014						
• # of workshops undertaken	#	0	2014	0		1		2015	
• # of technical papers produced	#	0	2014	0		1		2015	

3.7 The estimated total cost of this TC is US\$596,625, with US\$476,625 to be financed with funds provided by Fund for the Sustainable Energy and Climate Change IDB Special Program (SCI), and a local counterpart contribution of US\$120,000, to be provided in kind.

Indicative Budget

Components	IDB Funding (US\$)	Counterpart Funding (US\$)	TOTAL Funding (US\$)
Component 1: Adaptation to Climate Change Action Plan and Strategies	\$110,000	\$20,000	\$130,000
Component 2: Strategies for Supply-side Energy Management	\$135,000	\$40,000	\$175,000
Component 3: Strategies for Demand-side Energy Management	\$120,000	\$35,000	\$155,000
Component 4: Dissemination of Results	\$10,000	\$5,000	\$15,000
Project Coordinator	\$50,000	\$20,000	\$70,000
Auditing	\$15,000	-	\$15,000
Monitoring and Evaluation	\$25,000	-	\$25,000
Sub-Total	\$465,000		
Caribbean Development Bank - Financial Agent Contract Fee (2.5%)	\$11,625	-	\$11,625
GRAND TOTAL	\$476,625	\$120,000	\$596,625

- 3.8 **Technical and supervisory responsibility:** INE/CCS (through the Team leader) will have technical and supervisory responsibility for the execution of the program. The IDB's Country Office in Barbados (CBA) will provide routine operational support and will be the Unit with Disbursement Responsibility. The main contact at CBA will be the Operations Associate assigned to the program.
- 3.9 **Monitoring and evaluation:** CARILEC will monitor the progress of all program activities of the TC. Progress reports will be furnished to the Bank on July 1st and January 1st of each operational year and will be the responsibility of CARILEC. These reports will follow standard IDB format and will address program activities and finances, as well as results achieved. CARILEC will also facilitate the undertaking of an independent mid-term evaluation and a final evaluation when 90% of the Bank's resources have been disbursed. The evaluation will consider the execution of the project from a technical, institutional and financial point of view.

IV. EXECUTING AGENCY AND EXECUTION STRUCTURE

- 4.1 The Caribbean Electric Utility Services Corporation (CARILEC) is a not-for-profit regional association of electric utilities, suppliers, manufacturers and other stakeholders operating in the electricity industry in the Caribbean and is based in St. Lucia since 1990. Currently, the membership consists of 32 electric utilities from 30 countries in the region. The electric utilities in the member states of the IDB, namely Bahamas, Barbados, Trinidad and Tobago, Jamaica, Guyana, Suriname and non-member states of the OECS are members of CARILEC. There are also currently 54 Associate Members who are the major equipment manufacturers, suppliers, consultants and Independent Power Producers to the industry, and four Affiliate Members. The organizational structure of CARILEC consists of a Board of Directors, which comprises of 13 utility CEOs/Directors, one Associated Member representative and the Executive Director. The administrative structure of

CARILEC consists of professional staff (Executive Director, Financial Controller, Training Coordinator, Project Manager, Business Development Coordinator and Administrative Officer) and six support/clerical staff. Through its administrative and technical staff, the Secretariat has the capacity to coordinate the conduct of regional and operational studies. The Association provides training services to upgrade the skills of its member utility and electricity personnel, conference services, allowing interaction among electricity stakeholders and utility professionals, information services, disaster management to assist members in disaster planning and restoration, and undertake technical studies and surveys.

- 4.2 CARILEC has had previous experience with the execution of IDB technical projects as it was the executing agency for the operation Energy Efficiency and Renewable Project for CARILEC/ATN/OC-11496-RG/RG-T1639, which was completed with success in 2012. The objective of this program was to promote energy efficiency and use of RE in the electric utility sector in the Caribbean. It was a regional program involving the coordination of activities among several of CARILEC's utility members, which could have presented execution challenges but the program was smoothly implemented and all the expected results were achieved.
- 4.3 **Executing Agency (EA):** This TC will be executed by the CARILEC in collaboration with the Bank through the Climate Change and Sustainability Division (INE/CCS). CARILEC will coordinate with its members on the various activities of the proposal and will be responsible for the hiring of the consultants for the activities under the Project. The IDB's Country Office in Barbados (CBA) will assist in the Program's execution by liaising with the EA when required, providing fiduciary support and ensuring that disbursement requests are received and processed in a timely manner.
- 4.4 **Executing mechanism:** CARILEC will provide the overall oversight of the TC but will liaise with the team at the IDB when necessary. Also, a Project Coordinator with technical knowledge and project management skills will be contracted to assist with overseeing all the activities developed under this proposal. The CBA will assist in the Program's execution by liaising with the EA when required, providing fiduciary support and ensuring that disbursement requests are received and processed in a timely manner. The disbursement requests and processing workflow will be led by the Team Leader of the Program, with support from the CBA Operations Analyst, as well as the procurement and financial specialists on the project team. As CARILEC is based in St. Lucia which is a non-member country of the IDB, the IDB Charter requires the Bank to work with the Caribbean Development Bank (CDB) in cases where the OECS countries (e.g. St. Lucia), which are non-Bank members, are direct beneficiaries of Bank funds. The CDB will serve as financial agent for this TC under the framework of a customary agreement with the IDB.
- 4.5 **Procurement:** Procurement of goods and services will be carried out by the executing agency according to the IDB Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (GN-2350-9) of March 2011 and for the Procurement of Goods and Works Financed by the Inter-American Development Bank (GN-2349-9) of March 2011. An ex-ante modality will be used for the supervision of the procurement of goods and services because the procurement unit at the EA is relatively new and still requires some guidance in the procurement procedures of the Bank. See Annex II Procurement Plan.

- 4.6 **Audits:** CARILEC will be responsible for managing the Program's financial resources and will follow the Bank' standard procedures for auditing, international accounting norms and reporting.
- 4.7 CARILEC will also establish and maintain a separate and specific bank account for the purposes of managing the resources of this Program. It will prepare and submit to the IDB the Program's final financial statements within ninety (90) days after the date of the last disbursement.

V. MAJOR ISSUES

- 5.1 The expected risks for this operation are as follows:
 - a. Lack of institutional capacity within the executing agency to implement the project, which will be mitigated by undertaking an institutional assessment and implementation of its recommendations.
 - b. Lack of familiarity with IDB's Procurement and Fiduciary procedures by the executing agency, which will be mitigated by scheduled Procurement and Fiduciary training undertaken by IDB's local country office.
 - c. There is also a risk that interested utilities will not follow through with their initial expression of interest in regards to future investment options to improve their resilience and efficiency. To mitigate this risk, the investment options will be accompanied by a cost-benefit analysis in order to provide a motivation and justification for the investments.

VI. EXCEPTIONS TO BANK POLICY

- 6.1 This operation has no exceptions to any of the Bank's Policies.

VII. ENVIRONMENTAL AND SOCIAL STRATEGY

- 7.1 It is not anticipated that the activities to be financed in this TC will have negative direct social or environmental impacts. Based on the Bank's Environment and Safeguards Compliance Policy (OP-703) (see [Safeguard Policy Filter](#) and [Safeguard Screening Forms](#)), this operation's classification is "C": (i) Operations that are likely to cause minimal or no negative environmental and associated social and cultural impacts.

VIII. ANNEXES:

- 8.1 Annex I: [Letter of Request](#)
- 8.2 Annex II: [Procurement Plan](#)
- 8.3 Annex III: [Terms of Reference](#)