TC Document

I. Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	Energy Resilience for Sustainable Development in the Caribbean
▪ TC Number:	RG-T4613
▪ Team Leader/Members:	Aiello, Roberto Gabriel (INE/ENE) Team Leader; Alleng, Gerard P. (CSD/CCS) Alternate Team Leader; Garcia Nores, Luciana Victoria (INT/RIU); Johnson, Monique Therese Marie (CSD/RND); Juan Tulande Lopez (INE/ENE); Masson, Malaika Ebony Anietia (INE/ENE); Nogueira Felipe Honorio (INT/RIU); Pineros Cely Ana Maria (INE/ENE); Bonzi Teixeira, Augusto Cesar (INE/ENE); Sologuren Blanco, Jaime (INE/ENE); Lewis, Gilroy Francis (INE/WSA); Diaz Gill Virginia Maria (LEG/SGO); Echeverria, Carlos Bladimir (INE/ENE); Ballon Lopez, Sergio Enrique (INE/ENE)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	N/A
▪ Date of TC Abstract authorization:	September 2024
▪ Beneficiary:	The Bahamas, Belize, Suriname (RPG) Barbados, Jamaica, Guyana, Trinidad and Tobago (OneCaribbean).
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	N/A
▪ IDB Funding Requested:	OC SDP Window 1 - Regional Public Goods (W1A): US$475,000.00 OC Strategic Development Program Window 3 - Transitory Emerging Need for Sustainable Development in the Caribbean (W3B): US$500,000.00 Total: US$975,000.00
▪ Local counterpart funding, if any:	US$0
▪ Disbursement period:	36 months
▪ Required start date:	December 2024
▪ Types of consultants:	Firms and Individual Consultants
▪ Prepared by Unit:	INE/ENE-Energy
▪ Unit of Disbursement Responsibility:	CCB/CJA-Country Office Jamaica
▪ TC included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	Yes
▪ Alignment to the Institutional Strategy 2024-2030:	Economic integration; Environmental sustainability; Institutional capacity and rule of law

II. Objectives and Justification of the TC

2.1 The objective of this Technical Cooperation (TC) is to support The Bahamas, Barbados, Guyana, Jamaica, Suriname, Trinidad and Tobago, and Belize to adopt climate resiliency measures in the energy sector. Specifically, the TC aims to: (i) ensure that climate resiliency is addressed in planning and design of new energy infrastructure as well as in existing systems, (ii) strengthen energy sector response strategies and action plans in the aftermath of natural disaster, and (iii) promote the development and adoption of harmonized energy standards.

2.2 The beneficiary countries face the characteristics of Small Island Development States (SIDS) including small individual markets, distance to global markets, constrained natural resources, a small human resource base, and poor economies of scale. Supply prices are high due to market inefficiencies, local monopolies, and weak bargaining power. COVID-19 made evident

the urgency to address vulnerabilities to external shocks by economic diversification and planning for resilience towards building forward better.

2.3 Climate change is already exacerbating extreme weather events. Temperature indices for the Caribbean are all increasing, it's getting hotter with approx. 23 more 'hot' days and nights in a year, i.e. earlier and longer summers, and rain is more variable. There were two major region wide drought in the last decade (2009-10, 2013-16) and there's a rise in the number of the most intense hurricanes. Energy sector assets will become exposed to operating conditions beyond their design specifications, increasing the risk of structural damage, collapse, malfunctioning, and reduced performance. Electric grid reliability and efficiency are threatened with consequential impacts on other sectors including health, water supply, land transport and port operations. Notably under post-disaster conditions, the disruption of critical sectors may translate into severe losses in terms of ecosystems, infrastructure assets, and economic output.

2.4 Electric utilities face the challenge to respond quickly and adequately to restore electricity service and minimize losses in post-disaster circumstances. Similarly with the supply of fuels to ensure energy security. The cost of rebuilding is more expensive than investing in resilience before the next storm. Existing disaster response mechanisms in the Caribbean region include: (i) Caribbean Community's Emergency Response Strategy and Action Plan (CARICOM ERSAP); (ii) The Caribbean Electric Utility Services Corporation Disaster Assistance Program (CARILEC CDAP), a pooling of human resources for member utilities; (iii) Caribbean Catastrophe Risk Insurance Facility (CCRIF SPC), which offers parametric insurance policies; and (iv) Caribbean Disaster Emergency Management Agency (CDEMA), the regional inter-governmental agency responsible for comprehensive disaster management (CDM).

2.5 The ERSAP Action Plan (2023) found that Disaster Risk Management (DRM), Climate Change Adaptation (CCA) capacity, and Pre-Disaster Recovery Planning (PDRP) can be strengthened to meet the upcoming challenges; also, funding for response and resilience building is insufficient. The energy sector's planning for more resilient infrastructure and the response capacity is hampered by: (i) the diversity of technical standards in use; (ii) the lack of regional stocks of equipment and supplies enabling fast grid repair and service recovery; (iii) the lack of expedited procurement, logistics and customs clearance post-disaster; (iv) the inadequate funding for system recovery and resilience building due to constrained government budgets and poor appetite of private agents to invest.

2.6 Shared emergency management strategies and swift, technically and financially robust response mechanisms are key for effective post-disaster recovery of the electric service. Given their small size, mutual support among country power utilities is critical to ensure the quick recovery and repair of national electricity systems after natural disaster events. Harmonized approaches, procedures, and technical standards are enabling factors for regional integration of the Caribbean to shape economies of scale, leverage investment capital, and attract the interest of competitive technology suppliers and system integrators. Under the baseline, progress towards the objectives lacks momentum and coordination.

2.7 Energy conservation and Energy Efficiency (EE) are a second pillar towards sector sustainability and resilience as they decrease the need for more generation with cost savings to the consumers. In 2019, the CARICOM Regional Energy Efficiency Building Code (CREEBC), covering residential and commercial constructions, was developed by The CARICOM Regional Organization for Standards and Quality (CROSQ), CARICOM Energy Division, and The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Regional EE standards and Minimum Energy Performance Standards (MEPS)

also exist for refrigerators, lighting, and air conditioners. Yet, additional efforts are needed to promote and adopt these standards across the Caribbean. Additional harmonized standards would be needed to catch up with the global energy transition including Electric Vehicles (EVs) and charging infrastructure.

2.8 The weak resource base and small market size of the individual countries, and the similarities in vulnerabilities and threats from global climate change and economic shocks are the key drivers behind a regional approach to energy sector resilience. This TC is supportive to CARICOM member state policies towards a more robust internal market and assists electric utilities and governments to improve power system resiliency by making more effective use of assets and human resources and becoming more efficient. Harmonization of technical standards increases the region's bargaining power to attract state-of-the-art technology for rolling out the transition towards a low-carbon energy sector, at more competitive costs.

2.9 The direct beneficiaries of this TC will be relevant energy sector stakeholders of the Caribbean region.

2.10 **Institutional aspects.** This TC will be implemented by IDB's Energy Division (INE/ENE) in coordination with development partners such as CDB, WB, the United Kingdom, as well as Caribbean partners, including the utilities and energy ministries in the eligible countries, and the supporting regional organizations such as CARILEC, the CARICOM Secretariat Energy Division, CCREEE, and CROSQ as detailed below:

2.10.1 **Ministry of Energy and Transport (MET)** from The Bahamas oversees the energy sector. Purview on tariffs and competition are under the Utilities Regulation and Competition Authority (URCA). The Bahamas Power and Light (BPL) is the public utility ascribed to the MET.

2.10.2 **Barbados Ministry of Energy and Business (MEB)** is responsible for monitoring and policy development as concerning the electricity and oil and gas sector. Barbados Light & Power Company (BLPC) is the private-owned electric utility.

2.10.3 **Ministry of Public Utilities, Energy, Logistics and E-Governance (MPUELE)** in Belize. The Belize Energy Unit, established in 2012, plans, promotes, and manages the production, delivery, and use of energy through interventions in energy efficiency, renewable energy, and cleaner production. Belize Electricity Limited (BEL) is a mixed-capital company licensed to generate, transmit and distribute electric energy throughout Belize.

2.10.4 **The Office of the Prime Minister (OPM)** in Guyana has the policy-making and regulatory responsibility for the electricity sector, including granting public utility licenses, approval of expansion plans and performance targets. Guyana Power and Light (GPL) is the state-owned vertically integrated electric utility.

2.10.5 **Ministry of Science, Energy & Technology (MSET)** in Jamaica. MSET's Energy Division has the role is to provide advice on policy, legislative and regulatory initiatives. Jamaica Public Services Co. (JPSCo) is the private-owned electric utility responsible for energy distribution and supply.

2.10.6 **The Ministry of Energy and Energy Industries (MEEI)** is responsible for the overall management of the oil, gas and minerals sectors in the Republic of Trinidad and Tobago. The Trinidad and Tobago Electricity Commission (T&TEC) is responsible for the supply of power and electricity to the country.

2.10.7 **Energy Authority Suriname (EAS)** is an autonomous institution, established by the Act of March 10, 2016 (State decree 2016 no. 41). The EAS performs supervisory and steering

tasks and duties aimed at establishing and promoting optimal availability, affordability and sustainability in the energy sector of Suriname.

2.10.8 **Caribbean Electric Utility Services Corporation (CARILEC)** is the association of electricity industry companies in the Caribbean, established in 1989. CARILEC's mission is to facilitate networking across its members; training and knowledge sharing; implementing mutual utility assistance programs; and accelerating the energy sector transition through innovation and advocacy. The CARILEC Secretariat is based in Castries, Saint Lucia.

2.10.9 **Caribbean Community (CARICOM)** counts fifteen Member States and five Associate Members. CARICOM Secretariat is based in Georgetown, Guyana. CARICOM was established on 4 July 1973 with the signing of the Treaty of Chaguaramas. Several CARICOM entities are relevant to this TC including CARICOM Secretariat Energy Division, CARICOM Regional Organization for Standards and Quality (CROSQ), and Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE).

2.11 **Gender dimensions.** Women are under-represented in the Caribbean electricity area with functions showing a strong gender segregation. Energy services and post-disaster recovery efforts tend to be gender-blind, which affects the position of women (and low-income people) who are typically most heavily struck by natural disaster. The TC takes a gender-responsive approach by ensuring that women are duly presented in mapping and data collection exercises, training, and implementation of project activities.

2.12 **Strategic Alignment.** This TC is aligned with the current IDB Group Institutional Strategy: Transforming for Scale and Impact (CA-631) and the following objectives: (ii) address Climate Change (CC); and (iii) bolster sustainable regional growth with the development of a low carbon, resilient electricity sector. It is aligned with the operational focus areas: (i) biodiversity, natural capital and climate action; (ii) gender equality; (iii) institutional capacity, rule of law, and citizen security; (v) productive development and innovation through the private sector; (vi) sustainable, resilient, and inclusive infrastructure; and (vii) regional integration. It is aligned with the ONE Caribbean-Partnering for Caribbean Development Framework 2024-2027 (GN-3201-5), as it directly contributes to the climate adaptation and disaster risk management priority area and the cross-cutting area of strengthening institutions with an expected outcome of improved climate resilience of energy infrastructure in the region.

2.13 The TC is aligned with the Energy Sector Framework (GN-2830-8) by incorporating discussion and assessments on access to energy, sustainability, and energy security. It is also aligned with the Integration and Trade Sector Framework document (GN-2715-11) regarding the lessons learned from the synergy between CC and trade agendas. This TC is aligned with the Gender and Diversity Sector Framework document (GN-2800-13), as it will support a fair energy transition with equal opportunities for men and women.

2.14 This TC alignes with the IDB Group Country Strategy with The Bahamas (GN-3198-1), Belize (GN-3086), Suriname (GN-3065), Barbados (GN-2953-1), Jamaica (GN-3138), Guyana (GN-3187), and Trinidad and Tobago (GN-3071).

2.15 This TC is aligned with Window 1 A (Regional Public Goods) from the Ordinary Capital Strategic Development Program (OC SDP - W1A) (GN-2819-14), as it promotes cooperation and collective actions among the beneficiary's countries to adopt resiliency measures in the energy sector. In addition, it promotes sustainable economic growth in the region by financing low-carbon infrastructure projects that can improve productivity, competitiveness, and social inclusion, and by providing technical assistance to help countries and companies identify, design, and implement infrastructure projects that meet the development needs in the Latin

America and the Caribbean region. This TC is also aligned with Window 3 Transitory Emerging Need for Sustainable Development in the Caribbean (OC SDP - W3B) (GN-3201-5), as it promotes climate adaptation, disaster risk management and resilience.

2.16 Activities include technical assessments, capacity building and knowledge sharing to inform dialogues among relevant stakeholders in various levels of engagement. In the context of the Caribbean Island states, special consideration will be given to dimensions such as regional energy security, planning, energy sector decarbonization, energy sector resiliency and disaster risk management, private sector participation, digitalization and innovation, gender equality and social inclusion, and opportunities for tourism development and regional economic integration. This TC will be complemented by activities financed by the TC *Resiliency of Power Infrastructure and Response Preparedness for Energy Service Restoration* (RG-T4623), which is supported by the United Kingdom Sustainable Infrastructure Programme (UKSIP), a British fund that provides technical assistance in LAC, its components aim to support resilience in the power sector in the Caribbean both priorities for UKSIP.

III. Description of Components and Budget

3.1 **Component I. Promotion and development of harmonized standards (US$640,000).** Harmonized energy standards are a regional public good that offers economies of scale in the supply market of appliances and energy equipment while improving Energy Efficiency and Energy Conservation (EEC) across final energy uses, thereby lowering peak demand and system costs. This component will deliver the following outputs: (i) strengthened regional institutional framework for accelerating the adoption of harmonized energy standards in Caribbean countries; and (ii) promotion of existing energy efficiency standards.

3.2 This component will provide technical assistance and facilitate stakeholder engagement to accelerate the regional harmonization process. It will assess market issues and other barriers that have delayed widespread adoption of regional energy standards in the region. In response, it will design and implement targeted activities to accelerate the adoption of the existing CARICOM CROSQ energy efficiency building code, appliance standards and MEPS. It will support sector ministries and utilities to raise customer awareness about energy standards and appliance labels, and energy conservation measures. This component will further kick-start the process towards the development and adoption of new standards targeting enabling technologies for energy system resilience and decarbonization, including Battery Energy Storage Systems (BESS), EV and charging infrastructure.

3.3 **Component II. Sector resiliency and response preparedness (US$335,000).** This component will deliver enhanced infrastructure planning and response mechanisms as a regional public good, enabling ministries and electric utilities to reduce energy service recovery times in the aftermath of disaster. Specifically, it will deliver the following outputs: (i) strengthened disaster response planning capacities by energy sector stakeholders.; and (ii) strengthened utility support mechanisms.. The TC will provide technical training to build capacities on resilient energy technologies and response strategies, promote harmonized approaches for Disaster Response Management (DRM) planning, and liaise with stakeholders to streamline communication protocols. It will support selected electric utilities to update their Disaster Response Plans (DRP).

3.4 This component will coordinate regional DRM stakeholders including utilities, governments, CARILEC, CDEMA, and CARICOM, to assess current mechanisms for service recovery and issue recommendations for strengthening. Identified opportunities to expedite access to

finance for post-disaster recovery, include the development of ready-to-bid procurement packages (equipment, works and services) and support for enhanced mutual assistance mechanisms including the CARILEC Disaster Assistance Program (CDAP) and parametric insurance schemes such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF).

3.5 **Both components 1 and 2** include financing to facilitate coordination and execution support to the beneficiaries of this TC, thereby mitigating implementation risks. These components provide a budget for hiring external consultant services for project coordination, including a travel budget. As per RPG guidelines, this component covers the costs of the (external) final evaluation.

IV. Indicative Budget

4.1 The following table provides the total amount of funding needed to achieve the expected outputs by main component. The total cost of this TC will be US$975,000, of which US$475,000 will be financed by the Ordinary Capital Strategic Development Program (OC SDP), Window 1, Core Commitment 1 - Regional Public Goods (W1A) and US$500,000 by Window 3, Transitory Emerging Need for Sustainable Development in the Caribbean (W3B) (GN-2819-14). This TC will not have counterpart financing.

Indicative Budget

Component	Description	IDB Funding		Total Funding
		Ordinary Capital	ONE Caribbean	
Component I. Promotion and development of harmonized standards.	Promotion of energy efficiency standards and support for regional energy standard process.	US$300,000	US$ 340,000	US$640,000
Component II. Sector resiliency and response preparedness	Strengthening emergency response mechanisms and access to finance for service recovery.	US$175,000	US$ 160,000	US$335,000
Total		**US$475,000**	**US$500,000**	**US$975,000**

4.2 The proposal includes the letters of Non-Objection from the entities that will be part of the project (Annex I). The letters from the countries part of the TC not included as part of the Annex I are currently being processed.

V. Executing Agency and Execution Structure

5.1 To facilitate the development of this TC, as requested by the beneficiary countries, the execution will be carried out by the IDB's Energy Division (INE/ENE). In addition, no regional entities have been identified with the fiduciary capacities to implement the TC under IDB's rules and guidelines. The TC Unit of Disbursement Responsibility is based in Jamaica Country Office (CCB/CJA-Country Office Jamaica). Specifically, the IDB's team will have technical responsibility and will supervise the execution of this operation. This dynamic will: (i) facilitate proper articulation between the various actors within the technical dialogue framework of this TC; (ii) improve the dialogue in Caribbean countries; and (iii) avoid fiduciary management risks eliminating the need of a financial audit.

5.2 **Steering committee**: It is comprised of representatives from the beneficiary entities of the participating countries. The main functions of a Steering Committee are: (i) to analyze the development of the project's work program, procurement plan, and budget, as well as its financial and progress reports; (ii) review the terms of reference for the hiring processes to be carried out under the project; and (iii) facilitate the development of activities in order to achieve

the objectives of the project, including contact and cooperation with relevant institutions in each country, the provision of the necessary information to project consultants to carry out their work, the participation in meetings and workshops organized, and the review of technical inputs and products generated within the framework of the project.

5.3 **Procurement Policies.** All procurement to be executed under this Technical Cooperation have been included in the Procurement Plan (Annex IV) and will be hired in compliance with the applicable Bank policies and regulations as follows: (a) Hiring of individual consultants, as established in the regulation on Complementary Workforce (AM-650) and (b) Contracting of services provided by consulting firms in accordance with the Corporate procurement Policy (GN-2303-33) and its Guidelines.

5.4 Prior to the initiation of activities in each of the beneficiary countries, the Bank will seek the corresponding non-objection letter from the liaison country offices

5.5 The execution and disbursement period for this TC is estimated to be 36 months

5.6 Any knowledge products generated within the framework of this technical cooperation will be the property of the Bank and may be made available to the public under a creative commons license. However, upon request of the beneficiary, the intellectual property of said products may also be licensed and/or transferred to the beneficiary through specific agreements.

5.7 Final External Evaluation: As part of the requirements established by the Regional Public Goods Initiative (RPG), resources will be allocated for the project evaluation to measure the achievement of objectives and indicators and to systematize the lessons learned from the TCs. The final evaluation must be conducted based on the terms of reference previously agreed upon with the Bank and presented no later than 90 days after the last disbursement of funds from the Bank's financing.

VI. Project Risks and issues

6.1 There is a moderate risk of coordination delays given the complex stakeholder setting in the region spanning multiple jurisdictions, regional entities and development partners. This risk is mitigated by streamlining the operation into IDB’s energy sector portfolio and the track record in engaging with regional and national stakeholders supported by IDB’s country-based specialists.

VII. Environmental and Social Aspects

7.1 This TC will not finance feasibility or pre-feasibility studies of investment projects with associated environmental and social studies; therefore, it is excluded from the scope of the Bank's Environmental and Social Policy Framework (ESPF).

Required Annexes:

Request from the Client_99728.pdf

Results Matrix_41103.pdf

Terms of Reference_9412.pdf

Procurement Plan_2684.pdf