

TC Document

I. Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	Zero carbon energy paths in the Caribbean
▪ TC Number:	RG-T3899
▪ Team Leader/Members:	Aiello, Roberto Gabriel (INE/ENE) Team Leader; Masson, Malaika Ebony Anietia (INE/ENE) Alternate Team Leader; Abadal Colomina, Jordi (INE/ENE); Alleng, Gerard P. (CSD/CCS); Angulo Rodriguez, Emilio Jose (INE/ENE); Bonzi Teixeira, Augusto Cesar (INE/ENE); Echeverria, Carlos Bladimir (INE/ENE); Elizalde Baltierra, Alberto (ENE/CBH); Goldenberg Lopez, Federico (INE/ENE); Johnson, Rochelle Simone (INE/ENE); Madrigal Martínez, Marcelino (INE/ENE); Marquez Barroeta, Fidel (INE/ENE); Paredes, Juan Roberto (INE/ENE); Sologuren Blanco, Jaime (INE/ENE); Suber, Stephanie Anne (INE/ENE); Tejeda Ricardez, Jesus Alberto (INE/ENE); Vila Saint-Etienne, Sara (LEG/SGO)
▪ Taxonomy:	Research and Dissemination
▪ Operation Supported by the TC:	N/A.
▪ Date of TC Abstract authorization:	15 Mar 2021.
▪ Beneficiary:	Barbados, Guyana, Jamaica, Suriname, The Bahamas, Trinidad and Tobago
▪ Executing Agency and contact name:	Inter-American Development Bank INE/ENE
▪ Donors providing funding:	OC Strategic Development Program for Infrastructure(INF); OC Strategic Development Program for Integration(RIN)
▪ IDB Funding Requested:	OC Strategic Development Program for Infrastructure (INF): US\$300,000.00 OC Strategic Development Program for Integration (RIN): US\$100,000.00 Total: US\$400,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	36 months
▪ Required start date:	October 1st, 2021
▪ Types of consultants:	Individuals and Consulting firms
▪ 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):	No
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Environmental sustainability; Gender equality; Productivity and innovation

II. Objectives and Justification of the TC

- 2.1 The general objective of this Technical Cooperation (TC) is to help Caribbean countries advance towards a resilient, affordable, and sustainable energy sector that incorporates Renewable Energies (RE), Energy Efficiency (EE), cleaner fuels, electric mobility and storage technologies, and exploits the benefits of a regional coordination and integration of energy supply chains and infrastructure. The TC has the following specific objectives: (i) develop a regional assessment into decarbonization of the energy sector covering: climate change impacts and resilient infrastructure, energy planning and regulation, business models that consider private sector participation,

digitalization and innovation, gender equity and social inclusion, and opportunities for regional economic integration; (ii) estimate the benefits of decarbonization to the energy security of the countries, and recommend a verification mechanism to monitor the decarbonization process; and (iii) identify recommended low-carbon energy investments and interventions, including an assessment of current barriers affecting bankability and policy recommendations to remove or mitigate such barriers.

- 2.2 The energy sector in the Caribbean faces many challenges. The Caribbean countries, except for Trinidad and Tobago (which is a natural-gas producer) and Suriname (which is an oil producer mainly to supply domestic market), rely heavily on imported liquid fossil fuels for power generation. This dependency puts a severe burden on the commercial balance of most Caribbean countries leaving their economies exposed to price volatility on the global oil markets. Fiscal budgets are drained in countries where electricity tariffs do not allow full cost recovery and/or fuel costs are subsidized.¹ The discovery of oil and associated natural gas in Guyana and Suriname brings new opportunities and challenges for both countries and will influence the energy system in the greater Caribbean.²
- 2.3 The condition of the Caribbean countries as Small Island Development States (SIDS) plays an important role in limiting economies of scale in the energy sector.³ Small remote islands are characterized by modest loads for power generators. The low energy volumes and large distances severely constrain possibility for transporting electric energy between islands and sovereignties. By consequence, island power systems are characterized by larger installed capacities and poorer load factors than interconnected systems, resulting in high energy costs. As a result, energy tariffs in the Caribbean are among the highest in the world, affecting people's purchase capacity⁴ and undermining competitiveness of the national economies.
- 2.4 High unit energy costs in relation to economic performance affect utilities' capabilities for upscaling of the traditional business model by expansion of power generation and transmission and distribution (T&D) grids. The high tariffs presumably lead to a

¹ In 2018, Caribbean countries allocated approx. half a billion dollars to subsidize electricity tariffs. This is equivalent to 0.4% GDP in Bahamas, 0.2% GDP in Barbados, 1.15% GDP in Guyana, 1.15% GDP in Jamaica, 2.74% GDP in Suriname, and 0.96% GDP in Trinidad and Tobago. Sources: IDB Energy HUB.

² Guyana's overarching policy framework is centered around its Low-Carbon Development Strategy (LCDS, 2013) and the Green State Development Strategy Vision 2040 (GSDS, 2018), the latter committing to near 100% RE-based electricity generation, doubling of energy efficiency gains, and a shift to a low-carbon vehicular fleet by 2040 (GSDS, Objective D). Suriname's NDC, which was updated in 2020, reaffirms its commitment to maintain its RE-based electricity production above at least 35% of total. The Government of Guyana (GoG), in its Low Carbon Development Strategy (LCDS) aims to modify the energy matrix by incorporating cleaner solutions in the generation mix at a national level. GoG seeks to improve capacities for planning and governance to address the underlying constraints to growth with critical and transformative infrastructure reinforcing its Nationally Determined Contribution under the Paris Agreement.

³ Note that the territorial countries Suriname and Guyana are also considered as SIDS given the similarity in circumstances and challenges.

⁴ Average residential electricity tariffs (in US\$/kWh) are as follows: Barbados 0.25; Guyana 0.20; Jamaica 0.28; Suriname 0.04; Bahamas 0.31, and Trinidad and Tobago 0.06. In Suriname and Trinidad and Tobago tariffs are subsidized. In some SIDS in the Pacific region tariffs are even higher. Guam 0.20; American Samoa 0.325; Palau 0.27; Micronesia 0.42 (source: [Island Energy Snapshots. Office of Energy Efficiency & Renewable Energy](#)). In the EU (in €/kWh) vary from 0.18 in Germany to 0.06 in Sweden. Source: [Eurostat. Statistics Explained: Electricity Price Statistics](#). For comparison, in continental United States residential tariffs vary from 0.117 in West South Central 0.207 (New England), jumping to 0.327 in Hawaii. The latter case may serve as an example how island states are affected by high energy costs (Source: [Electric Power Monthly](#). EIA).

suppressed demand and by consequence lower revenue flow for utilities, which in turn impede utilities to grow and attain sufficient scale and financial performance to attract capital for investment in state-of-the-art, efficient, and low-carbon infrastructure. Notably, in some countries businesses and wealthier households recur to stand-alone energy supply (diesel and PV) and disconnect from the grid, primarily to secure service reliability and potentially gaining a financial benefit vis-a-vis high utility tariff. This trend even further compromises the classical utility model. Energy is the second largest expenditure after food in households in Latin America and the Caribbean (LAC). On average, households in LAC allocate about 8% of their annual budget to energy expenditure, including fuel used for the house and private transport. This is higher in the poorest households (8.9%) to the higher income households (7.4%). Nevertheless, the average proportion of energy varies by country and some Caribbean countries, as the Bahamas, accounts for the higher percentage (17%). Expenditure on electricity and its share in the household budget is more relevant in countries where electricity prices are relatively higher (e.g., Barbados, Jamaica, or Bahamas).⁵

- 2.5 Private sector involvement is hampered by a lack of conducive sector policy and regulation aimed at de-risking of energy investments. Moreover, global technology suppliers and project developers tend to focus on larger, developed markets, rather than the small business volumes that can be achieved in SIDS. On the islands, scarce land resources are contested while comprehensive spatial planning processes to reconcile economic, environmental, and social values are often not in place. This especially holds true for complex projects including wind farms and geothermal power; space constraints are one reason why some Caribbean are looking into near- and off-shore energy sources.⁶ Modular technologies including solar power and battery storage, which allow a more standardized approach to project design and execution, are being successfully deployed in the region since recent years but its potential remains largely untapped.
- 2.6 Coordination and integration of the fragmented island energy markets has been identified as key for obtaining a better bargaining position of the Caribbean countries viz-a-viz technology suppliers and fuel traders, for several reasons. One, collective fuel procurement models would increase contract volumes tenfold or more, compared to individual island transactions. It would trigger sharper price offers and draw competitive global traders into the region who would otherwise ignore this market. Second, RE project scales can be increased by developing a regional portfolio and procure and finance under an umbrella approach. Upscaling may be particularly relevant in a global context in which demand greatly outmatches supply of RE technology. Third, regional integration would assist Caribbean countries to harmonize technical standards⁷, optimize intra-regional logistics (including supply of RE and EE equipment and services), and exploit energy trading and storage options to reduce price volatility exposure, and improve energy security in general. These issues have regained relevance with the termination of the Petrocaribe program with Venezuela in the region (2018), and the urgency to move away from a fossil-dominated energy

⁵ IDB. [How do Households Consume Energy?](#) Jiménez Mori, R. and Yépez-García, A. Nov. 2020.

⁶ For example, Barbados under its Blue Economy concept. The IDB funded a scoping study into ocean thermal energy conversion (OTEC) and offshore wind under the Smart Energy Fund I.

⁷ Regarding EE, the Caribbean region falls back on legal and regulatory frameworks, e.g., none of the countries has minimum performance studies, neither EE labeling nor an EE law.

sector in view of global climate change and the commitments made under the Paris Agreement 2015.

- 2.7 In fact, recent technological progress translates into opportunities to transform energy systems in the Caribbean. Sustainable energy (SE) investments are becoming feasible due to the fast drop in capital costs of solar photovoltaic (PV), wind and battery storage technologies, while technical performance, technological maturity and conversion efficiencies continue to improve. As a result, the supply side for delivering SE solutions for the Caribbean has greatly improved. However, a range of barriers at the demand side prevent the uptake of SE technologies to enable a decarbonization of the power in alignment with the NDCs.⁸ These include: (i) outdated policy frameworks lacking provisions to ensure price transparency, fair grid access to third parties and preferential dispatch for renewable energies; (ii) weak incentives for power suppliers to increase system efficiencies and reduce costs; (iii) lack of independent energy planning authority, system regulator and arbitration⁹; and (iv) weak financial position of utilities for ongoing investment in generation and T&D. The build-up of experience with low-carbon energy technologies is slow, talented professionals seek business elsewhere and local RE ecosystems hardly develops. On the other hand, there is awareness now among policy makers and the general public that energy systems in the Caribbean need to be conceptualized in a way as to increase resilience to the impacts of extreme natural events, including frequent hurricanes and flooding - which are exacerbated by global climate change. This awareness fits into a broader vision on the vulnerability of Caribbean SIDS and opportunities to build resilience¹⁰.
- 2.8 Caribbean countries also exhibit opportunities for improvement in energy use by energy conservation (EC) and energy efficiency (EE) technologies. The regional average energy intensity is 4,618 BTU/US\$ of GDP, which is higher than the average for the entire LAC region 4,003 BTU/US\$ of GDP.¹¹ A large range of EE options has been identified as technical and financially feasible in industry, residential sector, and power sector¹². Previous studies have identified barriers to the implementation of EE mechanisms in the Caribbean such as: subsidies for conventional forms of energy, high capital costs and financing risks and uncertainties. Importantly, there is weak control on the importation of inefficient electric appliances and cars, due to a combination of factors including poor end-user awareness, absence or non-enforced minimum energy performance standards (MEPS), incipient but growing regional coordination¹³, and the general inadequate institutional capacity (a common SIDS problem). While some efforts have been made to introduce energy service companies (ESCOs)¹⁴, individual market sizes are small, skilled staff scarce, and regulation and

⁸ National Determined Contributions. See: <https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx>.

⁹ Notwithstanding efforts into this direction, such as the Eastern Caribbean Energy Regulatory Authority (ECERA) to be located in St. Lucia (World Bank Project P101414).

¹⁰ Such as supported by the IDB's [Build Forward Initiative](#), a \$3.5 billion multi-year program to help Caribbean countries sustainably recover while making technological leaps that will bring about a transformational future.

¹¹ IDB. [Sustainable Energy Paths for the Caribbean](#). Masson, M.; Ehrhardt, D. and Lizzio, V. Mar. 2020.

¹² See, as an example, Carbon Abatement Cost Curve Analysis for the Dominican Republic, [Caribbean Sustainable Energy Roadmap and Strategy](#), 2015, p.66. Caricom.

¹³ Notably under the leadership of the CARICOM Regional Organization for Standards and Quality (CROSQ): <https://caricom.org/institutions/caricom-regional-organisation-for-standards-and-quality-crosq/>.

¹⁴ Energy service companies (ESCOs) develop, design, build, and arrange financing for projects that save energy, reduce energy costs, and decrease operations and maintenance costs at their customers' facilities.

financing options including guarantee mechanisms are poorly developed. Regional integration also provides a way forward to join forces.

- 2.9 The Caribbean islands are highly vulnerable to extreme weather events, which are expected to increase in frequency and intensity due to global climate change effects. Tropical storms, hurricanes and floods have caused loss of thousands of human lives in the region, destroyed livelihoods, energy system assets, agricultural and livestock production systems, and weakened critical coastal ecosystems protecting the islands. Hurricanes damage generation and T&D infrastructure and cause economic losses due to defaulted supply to end-users and revenue losses for utilities.¹⁵ The devastation caused by hurricanes in recent years, and global climate trends, have increased the urgency in CARICOM¹⁶ countries to invest in energy resilience. Notably, the United States National Oceanic and Atmospheric Administration (NOAA) has predicted: (i) more frequent category 4 and category 5 hurricanes; (ii) rising sea levels causing larger storm surges; and (iii) rainfall increasing by 10–15% during hurricanes. Measures to increase power sector resilience include strengthening of generation plants, undergrounding of critical networks parts, and a decentralization of the power system in favor of distributed generation (DG) and battery storage.
- 2.10 Most Caribbean countries do not yet have an Integrated Resource and Resiliency Plan (IRRP) for their energy sectors. Neither are adequate governance frameworks and effective regulation in place for the promotion of SE solutions. Most countries are characterized by a vertically integrated, single-utility model and have just started to modernize. Typically, technical know-how, skilled staff, and sector information is concentrated in the utility rather than the Government or an autonomous sector body. By consequence, there is an asymmetry in terms of planning tools and access to information, exacerbated by a lack of regulation enforcing transparency. In some cases, there is no full understanding of what a transparent energy sector would entail and what the responsibilities and roles of the stakeholders should be. In practice, the situation translates into tedious procedures for third parties to access the grid, reluctance to accept self-supply schemes, and difficulties to assess energy costs at all

ESCOs contracts are usually performance-based, i.e. the ESCO's compensation is directly linked to the actual energy cost savings. From: <https://www.energy.gov/eere/femp/energy-service-companies-0>.

¹⁵ Early September 2019, Hurricane Dorian struck The Bahama's Grand Bahama and Abaco islands with punishing winds and storm surges, with New Providence also suffering impacts. Total losses are assessed at US\$3.4 billion (about 25% of GDP), with hundreds dead or missing and impacts on the economy that will last for years. From: <https://www.iadb.org/en/news/damages-and-other-impacts-bahamas-hurricane-dorian-estimated-34-billion-report>. In 2017, hurricanes Maria and Irma devastated islands across the Caribbean. Losses in Dominica were equivalent to 224% of GDP, with electricity infrastructure damage at US\$33 million and utility revenue losses US\$34 million. In Puerto Rico, Maria wiped out 90% of the island's electricity grid and caused damage costing more than US\$90 billion. Irma destroyed 95% of homes and infrastructure on Barbuda. Masson, M; Ehrhardt, D and Lizzio, V. *Sustainable Energy Paths for the Caribbean*. IDB. p.29-30.

¹⁶ The Caribbean Community (CARICOM) is a grouping of twenty countries: fifteen Member States and five Associate Members. Belize, Guyana and Suriname are the only non-island states. CARICOM came into being on 4 July 1973 with the signing of the Treaty of Chaguaramas, Trinidad & Tobago. CARICOM rests on four main pillars: economic integration; foreign policy coordination; human and social development; and security. Community institutions relevant to this TC include the Caribbean Centre for Renewable Energy & Energy Efficiency (CCREEE), Caribbean Community Climate Change Centre (CCCCC), CARICOM Regional Organisation for Standards and Quality (CROSQ), Caribbean Institute for Meteorology and Hydrology (CIMH), the Caribbean Development Bank (CDB), and the Caribbean Disaster Emergency Management Agency (CDEMA). Source: <https://caricom.org/institutions/>.

grid nodes. All these factors generate uncertainty, constrain private investments in the energy sector and affect the expansion and diversification of the energy matrix.¹⁷

- 2.11 Many of the Caribbean countries' NDC and/or decarbonization plans under the Paris Agreement present Greenhouse Gases (GHG) reduction targets that require substantial support to materialize. Barbados has pledged a 100% RE and 20% EE target by 2030 and Guyana by 2040. Suriname has committed to maintain its share of RE supply (existing large hydro) above 35% by 2030. Jamaica's NDC has committed a 20% RE share by 2030 - in 2018 this was increased to 50% by Government. The Bahamas aim at 30% RE in 2030, while Trinidad and Tobago have set a 10% RE goal by 2021 (which has not been updated).¹⁸ The preparation of robust methodologies underpinning such targets and progress monitoring thereof involves a consideration of countries' energy sector conditions and socio-economic prospects including aspects such as: fiscal situation, availability of local energy resources, expected energy demand, existing and planned infrastructure, electricity billing and losses, regulatory framework, among others.
- 2.12 This TC will build up on additional regional efforts the Bank is supporting, the promotion of new technologies such as electromobility. The Bank is supporting Electromobility Initiatives in Latin America and the Caribbean through RG-T3349, with a set of products and a roadmap to support the implementation of a successful transition to electromobility by becoming early adopters of the technology. The support includes (i) generation of knowledge on electromobility; (ii) to develop interventions as demonstration pilots in the region and strengthen the decision-making process of investments in the area; and (iii) to carry out communication and knowledge dissemination. Furthermore, the Bank is supporting the regionally a Green Hydrogen Facility (GH₂) to accelerate Latin America and the Caribbean decarbonization through green recovery (RG-T3904), to contribute with the decarbonization of the energy services and with the economic recovery of LAC through the support to the process of establishing a facility that will contribute with the development of GH₂ ecosystems. The proposed TC will build up on the aim to allow all LAC to explore the role that Green Hydrogen may play in their energy transition, and how it can allow more ambitious NDCs.
- 2.13 **Strategic Alignment.** This TC is consistent Update to the Institutional Strategy (AB-3190-2) and the Corporate Result Framework 2020-2023 (GN-2727-12),¹⁹ it is aligned with the Development Challenge of Productivity and Innovation and with the cross-cutting themes of: Climate Change and Environmental Sustainability through the development of RE, EE, clean fuels and other clean technologies, to reduce the cost of electricity generation, improve the quality of the electricity supply, create new jobs and reduce emissions; and Gender Equality and Diversity by the promotion of in-depth analysis to strengthen the energy-gender nexus. Additionally, the TC will assess recommended low-carbon energy investments and interventions in the Caribbean.
- 2.14 The TC is also aligned with the Climate Change Sector Framework (GN-2835-8), the Energy Sector Framework (GN-2835-8) and the Sustainable Infrastructure for

¹⁷ The CARICOM Energy Policy adopted in 2013 duly identifies the key challenges of the energy market. See: <https://energy.caricom.org/portfolio-items/caricom-energy-policy/>.

¹⁸ Source NREL-CCREEE Island Energy Snapshot: <https://www.energy.gov/eere/island-energy-snapshots>.

¹⁹ (i) 2.8 Jobs supported (#); (ii) 2.19 Emissions avoided (annual tons CO₂ equivalent); (iii) 2.22 Installed power generation capacity from renewable sources (MW); and (iv) 2.23 Value of investments in resilient and/or low-carbon infrastructure (\$).

Competitiveness and Inclusive Growth Strategy (GN-2710-5), by promoting the implementation of non-conventional renewable energies, EE and clean technologies in the Caribbean, which will contribute to climate change mitigation as well as promoting resilient infrastructure aligned with climate change adaptation goals, and explore options for the private sector to finance infrastructure and develop innovative business models and consider social inclusiveness (including gender) following nationally defined development priorities and policies. This TC is aligned with IDB's Country Strategies of Barbados, Guyana, Jamaica, Suriname, The Bahamas and Trinidad and Tobago by fostering a more efficient and modern public sector, supporting resilient infrastructure for growth, building climate resilience, and fostering private sector development.

- 2.15 Finally, this TC is aligned with the Ordinary Capital Strategic Development Program for Infrastructure (OCSDP for Infrastructure) as it seeks to improve the design and monitoring of public policies and the transmission of lessons learned in the infrastructure sector and generate and deepen sector knowledge on infrastructure. It is also aligned with the Ordinary Capital Strategic Development Program for Integration by strengthening the beneficiaries' capacities to engage in regional initiatives, promoting physical and connectivity in LAC, and deepen knowledge in global and regional integration.

III. Description of components and budget

- 3.1 **Component I: Regional decarbonization assessment of the energy sector (US\$380,000).** This component includes two subcomponents:

- (i) Caribbean regional decarbonization assessment of the energy sector, financed by this subcomponent (US\$250,000). The assessment will depart from studies into a sustainable energy pathway for the Caribbean region which point into economic benefits to the order of US\$16 billion over the next 20 years. The scope will include: (i) alternatives for the physical integration of the electricity systems of the islands, and proposals for the development of resilient, sustainable and energy-independent islands, (ii) alternatives for the integration of the fuel sectors, emphasizing the potential of green energy resources, (iii) alternatives for the policy and regulatory standardization of the electricity and fuel sectors, (iv) scenarios evaluating the impact of EE and EC policies and interventions; (v) recommendations and an indicative timeline for the implementation of mentioned alternatives and interventions, (vi) estimations of the potential emission reductions and benefits of the decarbonization to the energy security of countries, (vii) recommended verification mechanism to monitor the decarbonization process, (viii) a value chain analysis for the energy transition to build supply and O&M ecosystems, promote local partnerships, local jobs, and gender equity; and (ix) an assessment of measures to increase electricity system resilience. The study will be undertaken in coordination with regional agencies, including CARICOM, CCREEE, Caribbean Climate-Smart Accelerator, and other key development partners.
- (ii) Specific studies for the decarbonization of the energy sector in the Caribbean (US\$130,000). The regional assessment (subcomponent I.1) will provide an update on prioritized topics and interventions and draw a baseline for additional research into specific issues. This subcomponent will finance specific technical studies (envisaged: 3 studies) identified as relevant for the regional assessment. The scope of the studies will be defined during or as a result of

the regional assessment. Relevant fields of work can be drawn from the following, non-exhaustive list: (a) investment plans to increase resilience of T&D infrastructure by undergrounding; (b) in-depth analysis to strengthen the energy-gender nexus; (c) evaluation of technical and commercial potential of battery energy storage systems (BESS); (d) detailed analysis of relations between primary energy supplies and energy end-uses; and (e) gap assessment into innovations and digital technologies that may prove relevant for building an efficient, transparent, resilient and low-carbon energy sector in Caribbean countries.

- 3.2 **Component II: Knowledge and dissemination (US\$20,000).** This component will finance dissemination, logistics, coordination, and evaluation costs in coordination with regional agencies and other key development partners, including knowledge products and lessons learned from the activities of this TC.
- 3.3 This TC will be financed by the OC Strategic Development Program for Infrastructure (INF) and the OC Strategic Development Program for Integration (RIN) as described in the table below.

Indicative Budget

Component	Description	INF	RIN	Total Funding
Component I. Subcomponent I. Caribbean decarbonization assessment of the energy sector (US\$250,000). Specific studies for the decarbonization of the energy sector in the Caribbean (US\$130,000).	Regional decarbonization assessment of the energy sector	280,000.00	100,000.00	380,000.00
Component II.	Knowledge and dissemination	20,000.00	0.00	20,000.00
Total		300,000.00	100,000.00	400,000.00

- 3.4 The team leader for the execution of the TC is Roberto Aiello (INE/ENE), Energy Specialist based in the IDB country office of Jamaica and coordinator for the Caribbean region. The activities will be executed in close collaboration with the INE/ENE sector specialists and other staff, as required).
- 3.5 Project team will report progress annually, by March 15th, using IDB systems standard (Monitoring and Reporting System - M&R system). The progress report will include information about the actual inputs, output delivery, and outcome achievement, among others, as of the last day of each reporting period (December 31st).
- 3.6 The TC final evaluation report will be submitted according to the schedule established in IDB systems and will be financed from the TC budget.

IV. Executing agency and execution structure

- 4.1 The Bank will be the Executing Agency (EA) of this TC, considering the nature of the technical studies proposed for this operation. The beneficiaries of this TC are the Bank team and ultimately the Caribbean countries (Barbados, Guyana, Jamaica, Suriname, The Bahamas, and Trinidad and Tobago) through the studies to be developed by the Bank. More specifically, direct beneficiaries are the individuals at government entities, utilities, RE stakeholders, and communities, addressed by dissemination and knowledge-sharing activities. The approach for Output 1.2 will be to assess particularly

relevant issues and cases that shall make the regional assessment (Output 1.1) more relevant and operational. While countries do not formally participate in this TC, the selected specific studies under Output 1.2 will be informed by INE/ENE sector knowledge and specific policy issues and circumstances as expressed by countries, and/or the recommendations emerging from the regional assessment.

- 4.2 The IDB will be responsible for the selection and contracting of consulting firms and individual consultants. Activities to be executed are included in the Procurement Plan and will be contracted in accordance with Bank policies as follows: (a) AM-650 for Individual consultants; (b) GN-2765-4 and Guidelines OP-1155-4 for Consulting Firms for services of an intellectual nature; and (c) GN-2303-28 for logistics and other related services. The TC will include webinars and meetings with relevant stakeholders as part of the activities of knowledge sharing and dissemination under Component II. The TC does not present fiduciary management risks as it will be implemented by the Bank. For this same reason, no financial audit is required.
- 4.3 Based on earlier engagements, the IDB will coordinate and potentially collaborate with other agencies and initiatives targeting the Caribbean countries to increase efficiencies and impact. Relevant agencies include CCREEE²⁰ was legally created in 2018 in response to an MoU between SIDS-DOCK²¹, the United Nations Industrial Development Organisation (UNIDO) and the Government of Austria (2014). It is hosted in Bridgetown by the Government of Barbados and formally endorsed by CARICOM as the implementation hub for sustainable energy activities and projects within the region. One of its strategic programs is supported by the Knowledge Management and Capacity Development Unit, which supports regional capacity by providing energy-related training and learning needs of the Caribbean region.
- 4.4 The Caribbean Smart Accelerator is an entrepreneurial initiative that catalyzes and accelerates priority initiatives towards a Climate-Smart Zone, delivering resiliency, social development, and broad-based economic growth for the Caribbean. Its central objective is to transform the region's economy by fast-tracking public and private investment opportunities that support climate action and economic growth through sustainable development.²²
- 4.5 It is noted that no transfer of funds to other entities than IDB is foreseen.

V. Major issues

- 5.1 Restrictions related to the COVID-19 pandemic can have a negative impact in the preparation and execution of the activities of the TC. This risk will be mitigated using digital communication tools and adapting the activities to these restrictions.

VI. Exceptions to Bank policy

- 6.1 The TC does not require exceptions to the Bank policy.

VII. Environmental and Social Strategy

²⁰ See: [Caribbean Centre for Renewable Energy & Energy Efficiency](#).

²¹ SIDS DOCK is an initiative among member countries of the Alliance of Small Island States (AOSIS), to connect ("to dock") island states to global financial, technology and carbon markets. See: <https://sidsdock.org/what-is-sids-dock>.

²² <https://www.caribbeanaccelerator.org/about#who-we-are>.

- 7.1 The project category is C. No environmental assessment studies or consultations are required for Category "C" operations". For further details, please see the TC's Safeguard Policy Filter ([SPF](#)) and the Safeguard Screening Form ([SSF](#)).

Annexes:

[Results Matrix - RG-T3899](#)

[Terms of Reference - RG-T3899](#)

[Procurement Plan - RG-T3899](#)