

## TECHNICAL COOPERATION Document

### I. Basic Information for TC

▪ Country/Region:	BAHAMAS
▪ TC Name:	Supporting a Comprehensive Renewable Energy Program and Institutional Reform in the Bahamas
▪ TC Number:	BH-T1075
▪ Team Leader/Members:	Masson, Malaika Ebony Anietia (INE/ENE) Team Leader; Esquivel Gallegos, Maricarmen (CSD/CCS) Alternate Team Leader; Paredes, Juan Roberto (INE/ENE) Alternate Team Leader; Barragan Crespo, Enrique Ignacio (LEG/SGO); Bonzi Teixeira, Augusto Cesar (INE/ENE); Cabrera Botero, Maria Margarita (CSD/CCS); Chakalall, Yuri (CSD/RND); Chona, Gilberto E. (CSD/HUD); Goldenberg Lopez, Federico (INE/ENE); Johnson Naveo, Odile Ivette (INE/ENE); Madrigal Martínez, Marcelino (INE/ENE); Marquez Barroeta, Fidel (INE/ENE); Morales Vasquez, Nalda Orfilia (VPC/FMP); Swift, Kieron Kern Edward (IFD/CTI)
▪ Indicate if: Operational Support, Client Support, or Research & Dissemination	Operational Support
▪ If Operational Support TC, give number and name of Operation Supported by the TC:	BH-L1048
▪ Date of TC Abstract authorization:	09 Oct 2019.
▪ Beneficiary (countries or entities which are the recipient of the technical assistance):	The Government of Bahamas (GoBH)
▪ Executing Agency and contact name (Organization or entity responsible for executing the TC Program) {If Bank: Contracting entity} {If the same as Beneficiary, please indicate}	Inter-American Development Bank (Malaika Ebony Anietia Masson; malaikac@iadb.org)
▪ Donors providing funding (amount and Fund's name):	Compete Caribbean Partnership Facility(CCP); NDC Pipeline Accelerator Multidonor Trust Fund(ACL); OC Strategic Development Program for Sustainability(SUS)Compete Caribbean Partnership Facility(CCP); NDC Pipeline Accelerator Multidonor Trust Fund(ACL); OC Strategic Development Program for Sustainability(SUS)
▪ IDB Funding Requested:	US\$750,000.00S\$750,000.00
▪ Local counterpart funding, if any:	US\$0S\$0
▪ Disbursement period (which includes Execution period):	24 months
▪ Required start date:	November 15, 2019
▪ Types of consultants (firm or individual consultants):	International or National Consulting Firms and Individual Consultants
▪ Prepared by Unit:	INE/ENE-Energy
▪ Unit of Disbursement Responsibility:	INE-Infrastructure and Energy Sector
▪ TC Included in Country Strategy (y/n):	Yes

▪ TC included in CPD (y/n):	N
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Productivity and innovation; Institutional capacity and rule of law; Environmental sustainability

## II. Objectives and Justification of the TC

- II.1 The main objective of the program is to support The Bahamas in its drive to transform the energy sector, supporting a comprehensive renewable energy (RE) program and institutional reform to enable cheaper, more sustainable electricity. The objective of this Technical Cooperation (TC) is to support the preparation of feasibility studies needed to boost RE in The Bahamas and increase the security and reliability of the network, including its climate resilience.
- II.2 The Bahamas, a small open archipelagic nation, was impacted on September 1<sup>st</sup>, 2019 by the catastrophic category five Hurricane Dorian.<sup>1</sup> The damage to the northwestern islands of Abaco and Grand Bahama appears extensive, with the Ministry of Finance (MoF) initially estimating that the damage could require about US\$400 million or slightly more than 3% of Gross Domestic Product (GDP) to fund the recovery and reconstruction efforts post-hurricane clean-up and reconstruction spending. Temporary tax reliefs, and interruptions in revenue collection<sup>2</sup> will impair efforts to achieve determined budgetary and debt targets in the near and medium-term, and there are expectations that fiscal deficit levels for fiscal year 2019/2020 can exceed 4.5% of GDP.
- II.3 The electricity system in The Bahamas was already vulnerable and faced structural challenges, even before the hurricane. With an electricity generation based on fossil fuels, The Bahamas suffers from a high fuel import bill (7% of GDP)<sup>3</sup> and high electricity prices.<sup>4</sup> Volatile oil prices have contributed to make electricity tariffs among the highest in the Caribbean. In addition, the state-owned utility BPL has been financially challenged and its operation has been affected by frequent power outages<sup>5</sup> and elevated system losses. The power infrastructure lacks resiliency in its design and as such is highly exposed to climate-related hazards further compromising reliability of electricity, and limiting productivity.<sup>6</sup> Furthermore, there is no comprehensive

<sup>1</sup> The Inter-American Development Bank (IDB) activated a contingency loan of US\$100 million, with funds from the Contingent Credit Facility for Natural Disaster Emergencies (CCF), to help finance humanitarian and reconstruction efforts in The Bahamas. Post disaster damage costs assessment is currently underway led by a multi-agency team.

<sup>2</sup> There is expectation of roughly US\$200 million revenue shortfall as a result of Hurricane Dorian's rampage through the northern Bahamas.

<sup>3</sup> This contributes to a current account deficit and trade balance deficit of 16% and 21% of GDP, respectively (International Monetary Fund-IMF, 2019).

<sup>4</sup> In 2012, due to high oil prices, the electricity tariffs were US\$0.40 per Kilowatt hour (kWh) for residential customers. In 2017, tariffs were lower (US\$0.27/kWh retail and US\$0.25/kWh residential) mainly due to the reduction in oil prices but such tariffs are steadily increasing as oil prices rise affecting the resources allocated to household and firm electricity bills.

<sup>5</sup> The World Bank's "Doing Business 2019" report indicated a system average interruption duration index (SAIDI) of 5.3 and a system average interruption frequency index (SAIFI) of 6.8.

<sup>6</sup> The Bahamas ranked 87 out of 190 countries in the "getting electricity indicator" of World Bank's Doing Business 2019 Index, with an indicator of 4.0 out of 8.0 for reliability for supply and transparency of tariff index in comparison with 4.3 average in Latin America and the Caribbean.

regulatory framework for distributed and utility-scale RE in spite of the fact that the country has signed up to a demanding Nationally Determined Contribution (NDC) that establishes a target of 30% RE generation in the energy mix by 2030.

- II.4 At the global level, after years of steady cost decline for solar and wind technologies, renewable power is becoming an increasingly competitive way to meet new generation needs. The Bahamas ranks lowest in the region for RE penetration in its generation mix despite of possessing ample RE resources. Accelerating the transition to a renewables-based energy system represents a unique opportunity for The Bahamas and other Caribbean countries to meet climate change mitigation goals while fueling economic growth, creating new employment opportunities and enhancing human welfare.
- II.5 Recognizing this challenge, in June 2019, the GoBH officially requested the Inter-American Development Bank (IDB) support for the country's RE transformation. In particular, the GoBH is pursuing: (i) a move towards a cleaner electricity matrix in its resource generation mix, (ii) improved energy security through the use of RE resources, (iii) increased electricity access and affordability, and (iv) strengthened private sector development by increasing electricity reliability. As a respond to the government's request, the IDB started preparing the Conditional Credit Line for Investment Projects (CCLIP) BH-O006 and its first operation BH-L1048, along with this Operational Support TC.
- II.6 In addition, since on September 1st, 2019, The Bahamas was impacted by the catastrophic category five Hurricane Dorian, upon Government's requisition, the Bank adjusted the scope of the CCLIP and first operation to include the support to the reconstruction. Currently, the Conditional Credit Line for Investment Projects "Reconstruction with Resilience in the Energy Sector in The Bahamas" (BH-O006) and its first operation "Reconstruction with Resilience in the Energy Sector in The Bahamas" (BH-L1048) aim at supporting the GoBH in the reconstruction of the islands affected by the hurricane Dorian, but also in the Government's drive to transform the energy sector. The CCLIP and operation are complementary to the TC and will build upon its results.
- II.7 **Strategic Alignment.** The TC is aligned with the country's priority areas established in the Inter-American Development Bank (IDB) Group Country Strategy with the Commonwealth of The Bahamas 2018-2022 (GN-2920-1). It aims to increase the contribution of clean energy sources, such as solar PV, by strengthening the institutional capacity to regulate and modernize the energy sector. The TC will finance the economic, technical and legal analysis required for the development of resilient infrastructure and the finance of RE Projects. It is consistent with the updated Institutional Strategy 2010-2020 (AB-3008) with the development challenge of productivity and innovation by promoting the use of RE technologies, and with the cross-cutting theme of Institutional Capacity due to the strengthening of Bahamas regulatory framework and set-up of arrangements for the creation of a SPV. Moreover, the TC is in align with Corporate Results Framework, it supports the regional indicator of "Greenhouse gas emissions" and the country development results indicators "Installed power generation from renewable energy sources" and "Reduction of emissions with support of IDBG financing". In addition, the TC is aligned with the cross-cutting theme of climate change and environmental sustainability and with the Bank's Climate Change Sector Framework Document (GN-2835-3) as it will promote initiatives to reduce carbon emissions and to increase climate resilience. Lastly, the TC is aligned with the Sustainable Infrastructure for Competitiveness and Inclusive

Growth Sector Strategy (GN-2710-5) and with the Energy Sector Framework (GN-2830-5) through the study for the development of RE sources, improvement of energy security and sustainability.

II.8 The TC is aligned with the Compete Caribbean partnership facility (GN-2851) pillars of productivity and innovation; and enhancing the business and innovation climate in firms as this TC will support the studies for the development of a catalytic project in the RE sector that could have a significant demonstrative effect on the energy sector and will increase the support of deployment of the technology. The TC is aligned with the eligibility criteria for the NDC Pipeline Accelerator (GN-2890) as its studies will enable projects that will directly contribute to the country's NDC objectives. This TC is aligned with the objectives and focus of the Ordinary Capital Strategic Development Program for Sustainability as it will be providing assistance after a natural disaster and strengthen capacities to manage disaster risk with studies to incorporate resiliency in the energy infrastructure.

### III. Description of activities/components and budget

- III.1 The proposed TC. Expected to be implemented in 24 months, will conduct studies for the resilient reconstruction of the electricity infrastructure damaged by the Hurricane, in a resilient manner, under the first component. The main output of this component is the design of the T&D system, and the expected outcome is the system rebuilt based on the engineering designs. For the second component, Firms and consultants will be hired to carry out feasibility studies for the development of RE systems. The expected outputs are an Environmental and Social Assessment report, PV layouts and reports on site boundaries, potential sites, gender diagnosis. The expected outcome is the development of Solar PV installations in Nassau and family islands. Finally, for component III, which is going to support the regulatory framework, has a main output reports proposal of structure for a Special Purpose Vehicle (SPV) and a communication campaign. The SPV has been proposed since the government has expressed its willingness to develop its RE sources using new institutional arrangements, including eventually with participation of Bahamian society. The SPV can fulfill these requirements, and similar arrangements have been successfully implemented in other sectors in the Bahamas. The establishment of the SPV is expected as the main outcome of this third component. For more details on the expected results, please see the Result Matrix.
- III.2 **Component 1: Introduction of Resilient and RE Infrastructure in Abaco and Grand Bahama (US\$ 50,000).** This component will finance studies aimed at incorporating renewable energy and resilient infrastructure, as part of the restoration and rehabilitation of basic energy services in areas impacted by Hurricane Dorian. In particular, this component includes: (i) diagnostic studies for the reconstruction of electric infrastructure of Abaco & Grand Bahamas with RE, and (ii) Engineering designs for the reconstruction of the electricity infrastructure, in a resilient manner. Both studies will contemplate the installation of microgrids using rooftop and ground mount solar technologies, taking into consideration the expected load. Microgrids will be analyzed as a solution for isolated communities but also for key facilities.
- III.3 **Component 2: Reliable and Renewable Electricity in New Providence and Family Islands (US\$ 285,000).** This component will support the introduction and implementation of new models to develop resilient solar PV installations in The Bahamas by financing consultancy services for the assessment of energy systems in

Nassau and the Family Islands with a view to improve reliability, resiliency and cost. In particular: (i) environmental and social analysis with individual Project's Management Plans, this will entail a strategic environmental assessment and a high-level environmental and social management framework; (ii) technical analysis for the development of solar PV, such as site boundary surveys and topographic studies, geotechnical studies, conceptual PV layouts, PV Airport Interference investigation, civil/site plan permits and works; (iii) identification of public land sites where solar PV could be installed; (iv) New Providence SSRG technical support and coordination; (v) and a Gender and Social Inclusion Analysis to increase gender equality and inclusion of persons with disability in the sector and projects to be financed by the IDB.

**III.4 Component 3: Strengthening Resilience in the Regulatory Framework and Skills for the Energy Reconstruction Effort Across The Bahamas (US\$ 415,000).** This component will finance consultancy services to enable an institutional, legal and regulatory environment that promote resilient, distributed RE by: (i) strengthening the regulatory and legal framework for the integration of resilient RE infrastructure; (ii) enabling the development of local supply chains of innovative services and solutions to the solar industry; (iii) supporting the set-up of the institutional and legal arrangements for the creation of a SPV that will deploy RE solutions; (iv) preparation of a communication campaign and (v) stakeholder engagement and coordination. Under this component, products will be disseminated with the relevant internal and external stakeholders, acknowledging the commitment and contribution of the different Funds supporting this TC.

**III.5** The following table provides the total amount of funding need to achieve the expected outputs by main component.

**Indicative Budget**

<b>Component</b>	<b>Description</b>	<b>NDC Pipeline Accelerator Multidonor Trust Fund</b>	<b>Compete Caribbean Partnership Facility</b>	<b>OC Strategic Development Program for Sustainability</b>	<b>Total Funding</b>
Component I	Introduction of Resilient and RE Infrastructure in Abaco and Grand Bahama	<b>US\$ 0</b>	<b>US\$ 0</b>	<b>US\$ 50,000</b>	<b>US\$ 50,000</b>
Component II	Reliable and RE in New Providence and Family Islands	<b>US\$ 185,000</b>	<b>US\$ 95,000</b>	<b>US\$ 0</b>	<b>US\$ 280,000</b>
Component III	Strengthening resilience in the regulatory framework and skills for the energy reconstruction effort across The Bahamas	<b>US\$ 65,000</b>	<b>US\$ 155,000</b>	<b>US\$ 200,000</b>	<b>US\$ 420,000</b>
Total		<b>US\$ 250,000</b>	<b>US\$ 250,000</b>	<b>US\$ 250,000</b>	<b>US\$ 750,000</b>

**III.6 Reporting, Monitoring and Evaluation:** The progress of this TC will be monitored through its expected results, as defined in the Result Matrix (RM). The RM also defines the indicators and their expected timing. The team will be responsible for monitoring the evolution of these indicators and reports its physical and financial progress by Output and Component. The required information will be recorded in Convergence. The annual reports to be submitted will describe the progress toward

completing each of the TC Components throughout its duration, presenting the degree of fulfillment of the output indicators and progress toward the outcomes of the RM as recorded in the updated Procurement Plan. It will also provide relevant information to identify any areas that require improvement and lessons learned.

#### **IV. Executing agency and execution structure**

- IV.1 The Executing Agency (EA) of the TC will be the IDB, through the Energy Division (INE/ENE) in coordination with IDB Country Office in The Bahamas and the MoF. In compliance with the Operational Guidelines for TC Products—Revised version (GN2629-1), this TC is classified as Operational Support. The technical responsibility will be overseen by INE/ENE. The focal point designated and sector specialist responsible executing this TC will be the Senior Energy Specialist, Malaika Masson, based in Jamaica.
- IV.2 The MoF has expressed its interest in the IDB being the EA considering the Bank's experience on the topic and due to the MoF considerably limited technical and operational capacity to facilitate timely execution of the activities. This capacity constraint identified at the MoF is because current emergency generated after the Hurricane Dorian. In addition, the MoF and Bank agreed that contracting by the Bank would enhance more independence in the studies to be carried out, such as the environmental and social assessment and technical feasibility analysis.
- IV.3 **Procurement.** The IDB project team will contract individual consultants and firms in accordance with the Bank's procurement policies and procedures. The Bank, though INE/ENE, will contract individual consultants, consulting firms and non-consulting services in accordance with the Bank's current procurement policies and procedures as follows: (i) the individual consultants will be hired in accordance with the AM-650 Administrative Manual 'Complementary Workforce'; (ii) the procurement process for consulting firms will follow the Bank's Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-1) and the related Operational Guidelines (OP-1155-4) for hiring consulting services of intellectual nature; and (iii) the procurement of non-consultant services will follow the Bank's Corporate Procurement Policy (GN-2303-20). The initial procurement plan provides information on the contracts foreseen and their applicable monitoring and contracting methods.

#### **V. Major issues**

- V.1 The potential risk associated with this TC were identified; (i) A deficient coordination among the government representatives due to the current emergency situation could delay the TC implementation, this will be mitigated with the creation of a multi-institutional committee that will meet up periodically to follow-up on the status of the implementation; (ii) a lack of expertise to support key interventions required by energy actors (BPL, Ministry of Environment, Ministry of Works) in a timely fashion, the designation of a full-time technical expert dedicated to advising the MoF and BPL on energy planning, governance and RE coordination to move forward the agenda will help mitigate this risk and (iii) the lack of understanding of RE issues which causes delays and a lack of buy-in on key energy activities. This risk will be mitigated with the support provided to outreach, communications and raising-awareness among energy stakeholders.

#### **VI. Exceptions to Bank policy**

- VI.1 There are no exceptions to the Bank Policy.

## **VII. Environmental and Social Strategy**

VII.1 According to the Environmental and Safeguards Compliance Policy (OP-703), this TC has been classified as Category “C”. The latter ratifies a negative minimum or inexistent environmental, social and/or cultural impact; therefore, no environmental assessment studies or consultations are required for Category “C” operations.

**Required Annexes:**

[Request from the Client\\_27099.pdf](#)

[Results Matrix\\_63956.pdf](#)

[Terms of Reference\\_98575.pdf](#)

[Procurement Plan\\_50370.pdf](#)