

**SUPPORTING RENEWABLE ENERGY WITHIN THE IMPLEMENTATION OF THE ELECTRICITY ACT
IN THE BAHAMAS**

BH-T1064

CERTIFICATION

I hereby certify that this operation was approved for financing under the **Ordinary Capital Strategic Development Program for Infrastructure (INF)**, through a communication dated June 14, 2018 and signed by Felipe Caicedo. Also, I certify that resources from said fund are available for up to **US\$450,000** in order to finance the activities described and budgeted in this document. This certification reserves resource for the referenced project for a period of four (4) calendar months counted from the date of eligibility from the funding source. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, representing a risk that will not be absorbed by the Fund.

Certified by:

(original signed)

10/04/2018

Sonia M. Rivera

Date

Chief

Grants and Co-Financing Management Unit

ORP/GCM

Approved by:

(original signed)

10/05/2018

Rigoberto Ariel Yopez-Garcia

Date

Division Chief

Energy Division

INE/ENE

TC DOCUMENT

I. BASIC PROJECT DATA

▪ Country/Region:	BAHAMAS/CCB - Caribbean Group
▪ TC Name:	Supporting Renewable Energy within the Implementation of the Electricity Act in The Bahamas
▪ TC Number:	BH-T1064
▪ Team Leader/Members:	Malaika Masson, Team Leader, Juan Paredes, Alternate Team Leader, Cecilia Correa and Cecilia Seminario (INE/ENE); Mario Castañeda (VPC/FMP); Syreta Roberts (CCB/CBH); Charlene Small (INO/SMC); Betina Henning (LEG/LEG)
▪ Taxonomy:	Client Support
▪ Number and name of operation supported by the TC:	N/A
▪ Date of TC Abstract:	May 3 rd , 2018
▪ Beneficiary:	The Commonwealth of Bahamas
▪ Executing Agency:	Inter-American Development Bank (IDB)
▪ Donors providing funding:	Ordinary Capital Strategic Development Program for Infrastructure (INF)
▪ IDB funding requested:	US\$450,000.00
▪ Local counterpart funding:	\$0.00
▪ Disbursement period (which includes execution period):	30 months
Required start date:	October, 2018
▪ Types of consultants:	Firms
▪ Prepared by Unit:	Energy Division (INE/ENE)
▪ Unit of Disbursement Responsibility:	IDB Country Office in The Bahamas
▪ TC included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	Yes
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Productivity and innovation; institutional capacity and rule of law; climate change

II. JUSTIFICATION AND OBJECTIVE

2.1 Justification. The Bahamas, a small open archipelagic economy, has continued to experience low growth rates and rising debt levels since the global financial crisis. Fiscal deficits¹ and national debt levels are deteriorating, and foreign direct investments have declined.² Together with an old power generation infrastructure, The Bahamas suffers from a high fuel import bill (7% of Gross Domestic Product-GDP),

¹ Government deficits have averaged near 3% over the same period rising from 1.0% in 2006 to 2.6% by 2016/2017.

² The foreign direct investments inflows represented on average 2.6% of GDP (2013-2017) below the previous average of 5% of GDP for the period (2008-2012).

high electricity prices³ as well as a large and financially challenged utility – The Bahamas Power and Light (BPL) - which experiences frequent power outages,⁴ and elevated system losses. Volatile oil prices have contributed to make electricity tariffs among the highest in the Caribbean.⁵

- 2.2 Simultaneously, 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 global weighted average levelized cost of electricity of utility-scale solar Photovoltaic (PV) has fallen 73% since 2010, to US\$0.10 per Kilowatt hour (kWh) for new projects commissioned in 2017.⁶ However, The Bahamas ranks lowest in the region for Renewable Energy (RE) penetration in its generation mix despite of possessing ample RE resources with Global Horizontal Irradiation (GHI) averaging over 2100 kWh/m² and expected PV output of about 1,700 kWh/KWp.⁷ 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.⁸
- 2.3 To begin to address these challenges and opportunities, the Bahamian National Energy Policy (NEP) 2013-2033 established in 2014 as a core objective the increasing inclusion of sustainable RE sources into the generation mix to approximately 30% by 2033 in The Bahamas. The NEP acknowledges that renewables resources such as wind, solar, waste-to-energy and biomass are indigenous to The Bahamas and if developed adequately, can provide cleaner, and in the long term, affordable alternatives to fossil fuels. In 2015, the Electricity Act (EA) of 1956 was repealed to allow for RE utility-scale generation as well as self-generation. Section 25 of the EA provides that the public electricity supplier (BPL) should develop and submit for the Utilities Regulation and Competition Authority (URCA) approval, a time-bound plan for the introduction of sustainable RE technologies into the electricity supply system and an annual report of the accomplishments made against the approved plan.
- 2.4 In recent years, there have been enquiries by commercial entities which are seeking to pursue RE self-generation projects of capacity of 1 Megawatt (MW) or more,⁹ selling

³ In 2012, due to high oil prices the electricity tariffs were US\$0.40 per Kilowatt hour (kWh) for residential customers, and US\$0.44/kWh for hotel 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 (more than 50% reduction) but are steadily increasing as oil prices rise affecting the resources allocated to household and firm electricity bills.

⁴ The PROTEqIN Enterprise 2014 Survey found that Bahamian firms experience an average of 2.2 outages per month, just below Jamaica (2.5) but above Barbados (1.1), Suriname (0.7) and Trinidad and Tobago (0.5). The average duration, measured in hours of a typical outage was highest in Jamaica (1.30), Suriname (1.0), The Bahamas (0.9), Barbados (0.6) and Trinidad and Tobago (0.50).

⁵ In 2012, due to high oil prices the electricity tariffs were US\$0.40/kWh for residential customers, and US\$0.44/kWh for hotel 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 (more than 50% reduction) but are steadily increasing as oil prices rise affecting the resources allocated to household and firm electricity bills.

⁶ International Renewable Energy Agency (IRENA) (2018). Renewable Power Generation Costs in 2017. Compares with the fossil fuel-fired power generation cost range for G20 countries in 2017 that was estimated to be between US\$0.05 and US\$0.17/kWh.

⁷ [Global Solar Atlas](#).

⁸ IRENA (2016) Renewable Energy Benefits: Measuring the Economics. The report suggests that doubling the share of RE in the global energy mix increases global GDP in 2030 by up to 1.1%, equivalent of US\$1.3 trillion and given the distributed and labor-intensive nature of RE, direct and indirect employment in the RE sector could reach 24.4 million people in 2030.

⁹ Two such projects include the Nassau Airport Development Company solar plant, 5 MW (Request for Proposals pending) and the National Stadium Solar Car Park, 900 kW (at design stage). There has also been interest from other private sector entities in RE projects of various sizes.

excess energy to BPL for use in its system. In April 2016, BPL submitted its Renewable Energy Plan (REP) to URCA seeking to fulfil the requirements of section 25(2) of the EA. URCA considered that BPL's REP had merit but did not adequately address large capacity commercial and utility scale systems. According to URCA, the initial plan, which focused on the Small-Scale Renewable Generation Program, did not meet the NEP nor the objectives of the EA as it did not facilitate Independent Power Producers (IPPs) participation as it lacked an outline of internal planning processes or provisions for additional energy to the grid by these third-party providers.

- 2.5 Essentially, market governance and regulatory related challenges continue to be among the hindrances to the implementation of several energy projects, especially with respect to RE and private sector participation. At present, there is no comprehensive framework for distributed and utility-scale RE that reflects local technical, legal and economic conditions. An offtake agreement standard will be needed for medium and utility-scale solar, laying out the conditions and obligations of the electricity off-taker, to provide investors with certainty regarding the return on their investment. Stakeholders need to understand the reference price ceilings that could be used for competitive tender processes for utility-scale solar. One of the issues at the heart of the challenge is the fact that the value of solar PV on the Distributed Generation (DG) level is not fully understood by all energy stakeholders. This is in part leading to prolonged implementation of RE projects and stalled financial closure for others. A study of this nature will enable government to participate and contribute to the policy and regulatory discussion on the RE Plan. The definition of solar PV benefits and costs will need to be defined for key stakeholders to agree on the most efficient offtake mechanisms for the electricity produced by these investments.
- 2.6 Recognizing this challenge, in May 2018 the Government of The Bahamas (GoBH) created the Prime Minister's Delivery Unit (PMDU) within the Office of the Prime Minister, with the objective of advancing reforms in key areas, serving as a facilitator, providing ongoing support and challenges to ministries and agencies to keep a constant focus on delivery. Energy reform is one such area and the PMDU will have a central role in coordinating across public and private stakeholders to ensure challenges are identified and addressed in a timely and rigorous way. Working with stakeholders to define a road-map for reaching critical RE goals is key short-term objective and the PMDU is keen to strengthen its capacity to do so as well as that of key energy stakeholders within government on energy planning, standardization, certification and building public awareness. Having an independent analysis of the economic and societal value of solar PV at the DG level will not only enable stakeholders to have an appreciation of the wider benefits and costs to The Bahamas, but it will also help to cement collaboration between stakeholders and provide inputs to the definition of an offtake framework for on-grid RE.
- 2.7 **Objective.** The general objective of this Technical Cooperation (TC) is to support GoBH in adding RE to the generation mix by facilitating key information relevant to investment and interconnection agreements between key stakeholders. The specific objectives are to provide the PMDU with: (i) technical expertise related to energy planning and investments as part of the RE roadmap; (ii) an analysis of the value of solar PV at the distribution level which provides inputs from small to medium scale (less than 5 MW facilities¹⁰) offtake framework; and (iii) support to stakeholder forums to improve awareness of roles and responsibilities of key stakeholders on RE implementation.
- 2.8 This TC is aligned with the country's priority areas established in the Country Strategy 2018-2022 (BH-P1100). It aims to increase the contribution of clean energy sources,

¹⁰ This 5 MW is set as a tentative limit for the purpose of this study considering that the facilities will be connected at distribution level. However, future policy should deep in the rationale for DG scope and MW size.

such as solar PV, by strengthening the institutional capacity to regulate and modernize the energy sector. It will support the development of resilient infrastructure by providing the economic, technical and legal analysis and guidance necessary to finance RE projects. This TC is consistent with the updated Institutional Strategy 2010-2020 (AB-3008) and is strategically aligned with the development challenge of productivity and innovation, by promoting the use of RE technologies. The project is also 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. This TC is aligned with the Ordinary Capital Strategic Development Program for Infrastructure (INF) as it aims to increase the understanding of the benefits of solar PV projects and support the coordination of RE priorities. This will contribute to the design and implementation of RE policies and investments in The Bahamas.

III. DESCRIPTION OF ACTIVITIES AND OUTPUTS

- 3.1 **Component I: Delivery of a Report on the Value of Solar PV to The Bahamas at the DG level (US\$139,500).** This component will provide an independent assessment of the overall costs (e.g. possible back up generation and/or energy storage needs, interconnection, grid modernization etc.) and overall benefits (e.g. air quality, emission reductions, electricity, loss reduction, investment deferral, better integration of electric mobility, etc.) of increasing solar PV at the distributed generation level. The report will aim to provide a more accurate overall economic and societal value of this indigenous RE source and therefore to offer the basis for an agreed offtake framework for these investments. The report will also help to inform on the true costs and benefits of solar PV investments in The Bahamas, sensitizing energy stakeholders to the technical, economic, and financial aspects. Close collaboration and interaction with existing analysis undertaken by BPL, URCA and government entities responsible for energy will be required.
- 3.2 **Component II: Support to the PMDU to Coordinate RE Priorities (US\$256,500).** This component will provide: (i) experience and technical expertise to the PMDU over a two-year period to coordinate the delivery of the PMDU RE Roadmap; and (ii) technical support to develop and implement key energy priorities that strengthen coordinated energy planning in The Bahamas. This will include issues such as integrated energy planning; guidelines on Energy Efficiency (EE) and RE equipment standards; certification for RE and EE installers; improvements to the transportation sector to reduce the use of fossil fuels and rolling out public education and awareness campaigns on the value of solar RE at the DG level.
- 3.3 **Component III: Support to Energy Stakeholder Dialogue and Awareness Raising (US\$54,000).** This component will support the delivery of energy related events to strengthen coordination, collaboration and consensus among key energy stakeholders, particularly as it relates to increase awareness of roles and responsibilities as defined in the EA and NEP on RE implementation.

IV. BUDGET

- 4.1 The total cost of the TC will be US\$450,000, financed with resources from the Ordinary Capital Strategic Development Program for Infrastructure (INF).

Indicative Budget (in US\$)

Activities/Components	IDB/Funding
Component I: Delivery of a report on the value of solar PV to The Bahamas at the DG level	139,500
Component II: Support to the PMDU to coordinate RE priorities	256,500
Component III: Support to energy stakeholder dialogue and awareness raising	54,000
Total	450,000

V. EXECUTING AGENCY AND EXECUTION STRUCTURE

- 5.1 The Inter-American Development Bank (IDB), through the country office in The Bahamas will carry out the implementation of the TC. Malaika Masson (INE/ENE), based in Jamaica, will be the Team Leader and will be supported by INE/ENE team based in Washington D.C.
- 5.2 The Ministry of Finance has expressed its interests in the IDB being the executing agency considering that the PMDU has recently began to facilitate policy discussions and activities around a Renewable Energy Plan.
- 5.3 **Procurement.** The activities to be executed are included in the Procurement Plan (Annex II) and will be contracted in accordance with current Bank procurement policies and procedures. Specifically, the Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-1) and its Operational Guidelines (OP-1155-4) will be applied for hiring consulting services of intellectual nature and the Corporate Procurement Policy (GN-2303-20) for logistics and other related services.

VI. PROJECT RISKS AND ISSUES

- 6.1 A potential risk associated with this TC is reaching agreement with key energy stakeholders regarding the offtake framework and inputs to this such as grid stability analysis. This risk will be mitigated by the prioritization and spotlight given to key RE interventions by the Prime Minister under supervision of the PMDU. Another identified risk is related to the lack of expertise to support key interventions required by energy actors (URCA, BPL, Ministry of Environment, Ministry of Works) in a timely fashion. The designation of a full-time technical expert dedicated to advising PMDU on energy planning, governance and RE coordination to move forward the agenda will help mitigate this risk. Another general risk is the lack of understanding of RE issues which causes delays and a lack of buy-in on key energy activities. This risk is mitigated to the support provided to outreach, communications and raising-awareness among energy stakeholders. Finally, a technical risk that may emerge is with uncertainty regarding the maximum expected RE that could be introduced to the grid. The proposed mitigation action is to align the results of the grid stability study that is being developed by the Ministry of Environment and BPL with the study on the value of solar PV at the DG level.

VII. ENVIRONMENTAL AND SOCIAL CLASSIFICATION

- 7.1 This TC will finance consultancy products, studies and workshops and, as such, does not require implementation of specific environmental or social safeguard policies, therefore it has been classified as "C" (see [Safeguard Policy Filter Report](#) and [Safeguard Screening Form](#)).

Required Annexes:

- Annex I. [Government non-objection](#)
- Annex II. [Results Matrix](#)
- Annex III. [Procurement Plan](#)
- Annex IV. [Terms of Reference – Components 1, 2 and 3](#)