

TERMS OF REFERENCE COMPONENT I**Consultant to strengthen the evaluation and management capacity of the executing agency of the HA-L1140 and HA-G1045 Program, and provide support for the development of mini-grids****Post of Duty: Haiti**

The IDB Group is a community of diverse, versatile, and passionate people who come together on a journey to improve lives in Latin America and the Caribbean. Our people find purpose and do what they love in an inclusive, collaborative, agile, and rewarding environment.

1. Background and Justification

- 1.1. The Energy Division (INE/ENE) is a functional division within the Infrastructure and Energy Sector (INE/INE) of the Inter-American Development Bank (IDB), under the Vice Presidency of Sectors and Knowledge (VPS/VPS). The INE/ENE is in charge of preparing technical analyses and identifying and preparing programs, projects, technical cooperation, studies and sectoral notes of the energy sector.
- 1.2. Haiti's energy landscape is characterized by: (i) low level of electricity access and consumption; and (ii) heavy dependence on fossil fuels and biomass. The country has an estimated population of 11.4 million people of which 50.5% live in rural areas, located mostly far away from the national electricity grid. Electricity coverage in the country is around 46%. High capital costs and among the highest electricity costs in the Latin America and Caribbean region (US\$0.33/kWh for residential customers in the Caribbean) partly explain the low electrification rate. Providing access to the remaining population and fostering Renewable Energies (RE) as a long-term sustainable solution is a huge challenge, which is further aggravated by the fact that most underserved and unconnected vulnerable communities are geographically distant from the ten national grids operated by EDH, resulting in a significant increase in connection costs.
- 1.3. Haiti is moving towards a more sustainable energy sector, with the goal of providing affordable, safe and clean electricity to its citizens. To close the access gap, the Government of Haiti (GoH) has been working on several initiatives to develop decentralized off-grid solutions and Renewable Energy projects, such as mini-grids in remote areas solar generation with storage capacity. A bottom-up approach is at the center of the current strategy to increase local participation and empowerment of developers, ensuring private contribution as well. To support the country in closing the electricity gap, in 2019, IDB approved the operation "Improving Electricity Access in Haiti (HA-L1140 and HA-G1045)" to support the development of Mini-grids, and 2 solar PV power Plants at the Industrial Park of Caracol (PIC). Additionally, in 2021 with resources of the Clean Technology Fund, the Bank approved the program Battery Energy Storage System to maximize the use of surplus energy from the solar plants to be financed by HA-L1140 and HA-G1045 Programs and located at the PIC.
- 1.4. In the Republic of Haiti, following its mandate, the Energy Sector Regulatory Authority (ANARSE) is playing a leading role in modernizing Haiti's electricity sector through the expansion of mini-

grids for rural electrification with private sector participation, and the upgrade of the seven regional Electricité d'Haïti (EDH) grids, including the NE system where the Parc Industriel de Caracol (PIC for its abbreviations in French) is located. EDH is a vertically integrated utility founded in 1971, that responds to the Ministry of Public Works, Transport and Communication (MTPTC), which is the responsible authority for planning and supervision of the energy sector. EDH owns and operates sector assets and is responsible for delivery and sales of electricity throughout Haiti. A decree issued in February 2016 ended EDH's monopoly and created the Autorité Nationale de Régulation du Secteur de l'Energie (ANARSE). ANARSE was established in 2017 as Haiti's energy sector regulatory agency. ANARSE's participation is fundamental in achieving the HA-L1140 and HA-G1045 program's objectives, taking benefit from the experience gained by MTPTC's Energy Cell.

- 1.5. The "Unité Technique d'Execution" (UTE) or Executing Agency (EA) of the Ministry of Finance (MEF), currently manages the IDB loan operation "Improving Electricity Access in Haiti" (HA-L1140 and HA-G1045 Program), whose general objective is to increase reliable electricity access in Haiti that promotes economic development and to strengthen electricity sector governance. The specific objectives of the Program are: (i) the development of decentralized electrical mini-grids with private sector participation; (ii) fostering the supply of electricity with Renewable Energy (RE) in the PIC; and (iii) strengthening sector regulatory and planning capabilities.
- 1.6. While the MEF is the Executing Agency (EA) responsible for the fiduciary arrangements of the HA-L1140 and HA-G1045 Program, ANARSE and the MTPTC, through its Energy Cell will lead the technical aspects of the execution of the program. The technical aspects cover the preparation of sector documents, tender documents and their publication, terms of references, permit approval, supervision and the selection of key technical personnel.
- 1.7. The execution of the HA-L1140 and HA-G1045 Program has suffered significant delays mainly due to the complex situation in the country. The growing instability generated an atmosphere of distrust in the private sector reducing its interest in participating in bidding processes and causing obstacles for private companies, government institutions and the Executing Unit (EU) to function normally because of fuel shortages and insecurity.

2. About this position

- 2.1. We are looking for a Consultant to strengthen the evaluation and management capacity of the executing agency of the HA-L1140 and HA-G1045 Program, and provide support for the development of mini-grids. The general objective is to support the GoH to advance in the execution of operation HA-L1140, and coordinate its execution with other related activities financed by operations "Battery Energy Storage System to maximize the use of surplus energy from a solar photovoltaic plant located in the Caracol Industrial Park of Haiti" ([HA G1048](#)), and "Development of sustainable energy access projects in Haiti with private sector participation" ([HA-G1053](#)).
- 2.2. As a Consultant, the specific objective is to support the preparation of tender processes and evaluation of proposals, including specialized services for technical and financial modeling of energy access projects.

3. What you'll do:

- 3.1. Preparation of a work plan that includes the introduction, objectives, work methodology, resources, strategies and schedule of the activities to be carried out.
- 3.2. Characterization of the electrical infrastructure contracts awarded under the RFP1 and PHARES programs, as well as existing mini-grids like CEAC.
- 3.3. Review of studies carried out and analysis of existing methodologies on financial modeling for contracts awarded under the RFP1 and PHARES programs, as well as existing mini-grids like CEAC.
- 3.4. Update existing methodologies on financial modeling for contracts awarded under the RFP1 and PHARES programs, as well as existing mini-grids like CEAC.
- 3.5. Identifying specific challenges faced by each mini-grid, analyzing and proposing effective solutions for them.
- 3.6. Review evaluation of the feasibility of existing mini-grid models with private sector involvement, identifying the main challenges and suggesting improvements and identification of new opportunities for the development of these mini-grids, taking into account financial, economic and technical viability and analysis of the financial, economic and technical parameters that influence decisions for the development of the project.
- 3.7. Proposal of an optimal strategy for the development of the identified businesses for existing mini-grid models with private sector involvement, taking into account risks and restrictions, in order to estimate their viability.

4. **Key Activities**

- 4.1. Work Plan.
- 4.2. Reviewing the updated financial models and technical design that the mini-grid developers with contracts awarded under the RFP1 and PHARES programs will submit within three months after the signature of the concession contracts. This activity must include the following, at minimum:
 - 4.2.1. Identify the business models, the institutional and regulatory framework, and the current capital sources and financing mechanisms focused on the contracts awarded under the RFP1 and PHARES programs, as well as existing mini-grids like CEAC (weeks 2 to 8).
 - 4.2.2. Reviewing and updating financial models for contracts awarded under the RFP1 and PHARES programs, as well as existing mini-grids like CEAC
 - 4.2.3. Provide support and technical accompaniment in the financial model reviewing and updating for contracts awarded under the RFP1 and PHARES programs, as well as existing mini-grids like CEAC, including potential risks analysis, expected medium and long-term impacts, annualized monitoring indicators, and any other information that is considered relevant for the financial evaluation of the mini-grids businesses.
 - 4.2.4. Provide financial analysis and evaluation of current schemes by using the updated financial models.
- 4.3. Identify specific challenges faced by each mini-grid, propose effective solutions for them and develop a set of recommendations with lessons learned for future rounds of PHARES. This activity must include the following, at minimum:

- 4.3.1. Characterize the business models for mini-grids projects and storage for contracts awarded under the RFP1 and PHARES programs, as well as existing mini-grids like CEAC or others implemented in recent years in Haiti, analyze the financial, economic, technical and environmental sustainability conditions of the business models in progress; identify the technological aspects and scalability of these models; study the financial sustainability, affordability of supply, applicable tariff schemes and subsidies; characterize levels of supply, reliability and quality of service, and other performance indices; and consider the impact on living conditions, sustainable development and gender aspects in local communities.
 - 4.3.2. Based on international references for similar businesses, analyze the financial and operational performance.
 - 4.3.3. Identify the advantages and disadvantages (pros and cons) in the remuneration and costs schemes, use of current capital sources and financing mechanisms.
 - 4.3.4. Provide financial analysis and evaluation of proposed effective solutions by using the updated financial models.
- 4.4. Evaluate the feasibility of existing mini-grid models with private sector involvement, identifying the main challenges and suggesting improvements and recommendations for the sustainability of business models for the mini-grids, and the institutional and regulatory framework. This activity should include, at a minimum:
- 4.4.1. Based on the existing information, as well as the information collected through the interviews to be carried out with authorities and officials, and other actors in the sector, prepare a diagnosis of the situation of the mini-grids businesses.
 - 4.4.2. Evaluate the feasibility of existing mini-grid models.
 - 4.4.3. Conduct a strategic review of ongoing plans and programs, including regulatory framework and current regulations, with a view to their suitability and integrity for the regulatory oversight required under a program to systematically scale access to electricity, and that includes public service companies, regulators and service providers.
 - 4.4.4. Identify the main challenges and suggest improvements and recommendations for the sustainability of business models for the mini-grids.
 - 4.4.5. Develop and analyze proposals on business models: economic, financial, technical and environmental sustainability; technological aspects and scalability; affordability, fees and subsidies; reliability and quality of service, and other performance indices.
 - 4.4.6. Develop and analyze proposals for the assignment of responsibilities in the process of developing new mini-grids.
 - 4.4.7. Identification of capital sources and public, private, reimbursable and non-reimbursable international cooperation financing mechanisms, and other currently used.
 - 4.4.8. Detail procedures for the acquisition and use of capital from identified sources and mechanisms.
 - 4.4.9. Develop and analyze proposals for regulatory and political planning and improvement: inclusivity, social orientation, public-private participation, and future vision.
 - 4.4.10. Develop and analyze proposals to focus the process on improving living and development conditions as an objective of mini-grids development, participation of local communities, determination of basic energy services, and gender aspects.

- 4.5. Support the EU in monitoring all contracts' milestones, updating the results matrix, PEP and systematically collecting information for the preparation of the semiannual reports and final evaluation.
- 4.6. Develop a final report that summarizes activities No. 4.2 to No. 4.5. This report should contain an executive summary, identification of current business models, the financing model tool and analysis, specific challenges faced by each mini-grid and effective solutions, evaluation of business viability and financing mechanisms, proposals of mechanisms for Haiti, conclusions and recommendations.
- 4.7. Prepare a presentation of at least 3 hours with the main topics covered by the Consultant (week 16).

5. Expected Outcome and Deliverables

- 5.1. The following reports must be submitted:
- 5.2. Workplan. A work plan must be presented that details the methodology for the development of the activities and their execution times. The work plan must be delivered within 10 days after the hiring date.
- 5.3. Initial report regarding activity described in 4.2, 4.3, 4.4 and 4.5.
- 5.4. Interim report regarding activities described in 4.2, 4.3, 4.4, and 4.5.
- 5.5. Presentation including: (i) updated financial models and analysis; (ii) the specific challenges identified for each mini-grid and effective solutions proposed for them; and (iii) the feasibility evaluation results of existing mini-grid models with private sector involvement, and the main challenges identified and improvements suggested.
- 5.6. Final report regarding activities 4.2, 4.3, 4.4, 4.5, 4.6 and 4.7.

6. Project Schedule and Milestones

- 6.1. The schedule of deliverables and milestones for this project are:
- 6.2. Week 1: Work plan;
- 6.3. Month 3: Initial report;
- 6.4. Month 8: Interim report;
- 6.5. Month 12: Presentation and final report.

7. Reporting Requirements

- 7.1. The products will be delivered to the Bank in English language and in an electronic file in formats compatible with MS Office and Adobe Reader. The calculation excel sheets, reports, graphs, tables and any other document produced for this Consulting will be part of the products owned by the Bank.
- 7.2. All reports must be submitted to the Bank in an electronic file. The report must include a cover page, main document, and all annexes. Files in Zip format will not be accepted as final reports due to the regulations of the Archives Management Section.

8. Acceptance Criteria

- 8.1. For each report, the Consultant must hold a presentation meeting with the Bank team, and other interested parties designated by the Team Leader. It should summarize and describe the methodology used, information collected, findings and recommended design, among other key aspects. The presentation may be developed through Videoconference.
- 8.2. The meeting must be held 5 days after the delivery of each report, in order to give the Bank team time to have observations. To finalize the acceptance of the deliverable, the Consultant must make the respective modifications to the report and present a new version with the observations addressed.

9. Payment Schedule

9.1. Disbursements will be made according to the following scheme:

- First payment: 10% after approval of the work plan;
- Second payment: 30% after approval of the initial report;
- Third Payment: 30% after approval of the interim report;
- Final payment: 30% after approval of the final report.

The total amount of the contract includes all expenses that will be incurred for the development of this consultancy, including travel and per diem.

10. Supervision

- 10.1. The Consultant must hold periodic virtual or in-person meetings to agree on the work methodology and present the most relevant progress of the study. In particular, there will be a start-up workshop, a final workshop and one with the presentation of each report. Additionally, there must exist periodic communications with the parties, through virtual meetings or email, with a brief description of the progress of the activities carried out, in order to maintain fluid communication, which allows the optimal development of the study. These communications will be complementary to the virtual meetings in which the Consultant presents their content in detail.
- 10.2. The Energy Division (INE/ENE) of the Bank have designated the teams and their respective project leaders, with whom the Consultant will carry out formal communication between the parties. Consulting follow-up meetings will be held monthly (or as frequently as the project leaders determine as deemed necessary). The Products will be reviewed and approved by the Energy Division (INE/ENE) of the Bank.
- 10.3. The Consultant will work under the supervision of Wilkferg Vanegas (INE/ENE), specialist in the energy sector.

11. What you'll need

- **Education:** Master's degree (or equivalent advanced degree) in engineering or other fields relevant to the responsibilities of the role.

- **Experience:** At least 10 years of progressive experience in financial modeling for energy projects.
- **Languages:** Proficiency in Spanish and English, spoken and written, is required. Additional knowledge of French and Portuguese is preferable.

12. Key skills:

- Learn continuously.
- Collaborate and share knowledge.
- Focus on clients.
- Communicate and influence.

13. Requirements:

- **Citizenship:** You are either a citizen of Haiti or a citizen of one of our 48-member countries with residency or legal permit to work in Haiti.
- **Consanguinity:** You have no family members (up to the fourth degree of consanguinity and second degree of affinity, including spouse) working at the IDB, IDB Invest, or IDB Lab.

14. Type of contract and duration:

- **Type of contract:** Products and External Services Consultant (PEC), Lump Sum.
- **Length of contract:** 12 months.
- **Work Location:** On site/ Port au Prince Haiti / Country of the Consultant

Security constraints and civil disturbance from the current socioeconomic crisis in Haiti may result in project execution delays due to travel restrictions for international consultants who cannot travel to Haiti. In that regard, several of the activities to be financed by this TC will be performed mostly remotely, with site visits when possible. Also, the Team will schedule periodic virtual meetings with all the stakeholders and consultants involved. In this way, the team will verify that the consultants have access to all the information necessary to carry out their work promptly. The bank, with support from CHA, will monitor the security situation in the country to identify the periods when travels to Haiti represent a lower risk for international consultants.

What we offer

The IDB group provides benefits that respond to the different needs and moments of an employee's life. These benefits include:

- A **competitive compensation** package.
- A flexible way of working. You will be evaluated by deliverable.

Our culture

At the IDB Group we work so everyone brings their best and authentic selves to work, willing to try new approaches without fear, and where they are accountable and rewarded for their actions.

Diversity, Equity, Inclusion and Belonging (DEIB) are at the center of our organization. We celebrate all dimensions of diversity and encourage women, LGBTQ+ people, persons with disabilities, Afro-descendants, and Indigenous people to apply.

We will ensure that individuals with disabilities are provided reasonable accommodation to participate in the job interview process. If you are a qualified candidate with a disability, please e-mail us at diversity@iadb.org to request reasonable accommodation to complete this application.

Our Human Resources Team reviews carefully every application.

About the IDB Group

The IDB Group, composed of the Inter-American Development Bank (IDB), IDB Invest, and the IDB Lab offers flexible financing solutions to its member countries to finance economic and social development through lending and grants to public and private entities in Latin America and the Caribbean.

About IDB

We work to improve lives in Latin America and the Caribbean. Through financial and technical support for countries working to reduce poverty and inequality, we help improve health and education and advance infrastructure. Our aim is to achieve development in a sustainable, climate-friendly way. With a history dating back to 1959, today we are the leading source of development financing for Latin America and the Caribbean. We provide loans, grants, and technical assistance; and we conduct extensive research. We maintain a strong commitment to achieving measurable results and the highest standards of integrity, transparency, and accountability.

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TERMS OF REFERENCE COMPONENT II**Consultant to strengthen the financial evaluation capacity of the executing agency of the HA-L1140 and HA-G1045 Programs****1. Background and Justification**

- 1.1. The Energy Division (INE/ENE) is a functional division within the Infrastructure and Energy Sector (INE/INE) of the Inter-American Development Bank (IDB), under the Vice Presidency of Sectors and Knowledge (VPS/VPS). The INE/ENE is in charge of preparing technical analyses and identifying and preparing programs, projects, technical cooperation, studies and sectoral notes of the energy sector.
- 1.2. Haiti is a Caribbean country with an estimated population of 11.3 million inhabitants, of whom 1.8 million live in the Northern region, the fastest-growing region in the country (2015 figures). Haiti is the poorest country in the Western Hemisphere, with a Gross Domestic Product (GDP) per capita of USD 870 in 2018 and a Human Development Index ranking of 168 out of 189 countries in 2018. Over 6 million Haitians live below the poverty line on less than USD 2.41 per day, and more than 2.5 million people fall below the extreme poverty line of USD 1.23 per day. About 65% of the population has not access to electricity, the majority located in rural areas.
- 1.3. Haiti's energy landscape is characterized by: (i) low level of electricity access and consumption; and (ii) heavy dependence on fossil fuels and biomass. The country has an estimated population of 11.4 million people of which 50.5% live in rural areas, located mostly far away from the national electricity grid. Electricity coverage in the country is around 46%. High capital costs and among the highest electricity costs in the Latin America and Caribbean region (US\$0.33/kWh for residential customers in the Caribbean) partly explain the low electrification rate. Providing access to the remaining population and fostering Renewable Energies (RE) as a long-term sustainable solution is a huge challenge, which is further aggravated by the fact that most underserved and unconnected vulnerable communities are geographically distant from the ten national grids operated by EDH, resulting in a significant increase in connection costs.
- 1.4. Haiti is moving towards a more sustainable energy sector, with the goal of providing affordable, safe and clean electricity to its citizens. To close the access gap, the Government of Haiti (GoH) has been working on several initiatives to develop decentralized off-grid solutions and Renewable Energy projects, such as mini-grids in remote areas solar generation with storage capacity. A bottom-up approach is at the center of the current strategy to increase local participation and empowerment of developers, ensuring private contribution as well. To support the country in closing the electricity gap, in 2019, IDB approved the operation "Improving Electricity Access in Haiti (HA-L1140 and HA-G1045)" to support the development of Mini-grids, and 2 solar PV power Plants at the Industrial Park of Caracol (PIC). Additionally, in 2021 with resources of the Clean Technology Fund, the Bank approved the program Battery Energy Storage System to maximize the use of surplus energy from the solar plants to be financed by HA-L1140 and HA-G1045 and located at the PIC.
- 1.5. In the Republic of Haiti, following its mandate, the Energy Sector Regulatory Authority (ANARSE) is playing a leading role in modernizing Haiti's electricity sector through the expansion of mini-grids for rural electrification with private sector participation, and the upgrade of the seven regional Electricité d'Haïti (EDH) grids, including the NE system where the Parc Industriel de

Caracol (PIC for its abbreviations in French) is located. EDH is a vertically integrated utility founded in 1971, that responds to the Ministry of Public Works, Transport and Communication (MTPTC), which is the responsible authority for planning and supervision of the energy sector. EDH owns and operates sector assets and is responsible for delivery and sales of electricity throughout Haiti. A decree issued in February 2016 ended EDH's monopoly and created the Autorité Nationale de Régulation du Secteur de l'Energie (ANARSE). ANARSE was established in 2017 as Haiti's energy sector regulatory agency. ANARSE's participation is fundamental in achieving the HA-L1140 and HA-G1045 program's objectives, taking benefit from the experience gained by MTPTC's Energy Cell.

- 1.6. The "Unité Technique d'Execution" (UTE) or Executing Agency (EA) of the Ministry of Finance (MEF), currently manages the IDB loan operation "Improving Electricity Access in Haiti" (HA-L1140 and HA-G1045), whose general objective is to increase reliable electricity access in Haiti that promotes economic development and to strengthen electricity sector governance. The specific objectives of the Program are: (i) the development of decentralized electrical mini-grids with private sector participation; (ii) fostering the supply of electricity with Renewable Energy (RE) in the PIC; and (iii) strengthening sector regulatory and planning capabilities.
- 1.7. While the MEF is the Executing Agency (EA) responsible for the fiduciary arrangements of the HA-L1140 and HA-G1045 program, ANARSE and the MTPTC, through its Energy Cell will lead the technical aspects of the execution of the program. The technical aspects cover the preparation of sector documents, tender documents and their publication, terms of references, permit approval, supervision and the selection of key technical personnel.
- 1.8. The Government of Haiti (GOH) has defined the development of the Northern region as one of its top priorities. To promote economic growth, generate local jobs, and increase overall productivity in the region, the Bank's strategy is to provide favorable operational conditions to attract and retain private investment and increase the region's manufacturing base and export capacity. The growth pole strategy for the Northern region focuses on the establishment of industrial parks and key infrastructure projects.
- 1.9. The Parc Industriel de Caracol (PIC) is the result of an agreement, signed in September 2008 between the Government of Haiti, the United States Department of State (US-DOS), and the Bank, to establish an industrial park at the core of the Northern region. The PIC opened in 2012 and today it is the largest employer in Northern Haiti with over 14,000 people (62% women), with the potential to employ over 20,000 more, and concentrates part of Haiti's apparel industry. PIC exports and domestic sales have continuously increased from 2012 and are valued at USD 21.5 million by 2019. Total payroll for the first three quarters of 2019 was USD 19.9 million. Additional demands for new buildings were confirmed during 2019, coming from current tenants and new firms. The Bank and the Government are working on the preparation of a new financing to expand the capacity of the PIC with new buildings for industrial purposes.
- 1.10. The PIC is located in the Northeast region of Haiti. The electricity for PIC is supplied by a 10MW Thermal Energy Plant (TEP), consisting of 6 units of 1.675 MW each operating with heavy fuel oil. The electricity consumption of PIC Customers is mostly from Monday to Friday from 7:00 AM to 5:00 PM. Peak demand is about 4.5MW, which will increase to 5.5MW in the next few years. The TEP also supplies energy to residential and commercial customers from communities outside the PIC (Non-PIC customers): Caracol, Limonade, Trou du Nord, Terrier Rouge and Sainte Suzanne.

- 1.11. To reduce the electricity costs from 0.30 to 0.16 USD/kWh to attain the target tariff demanded by the PIC industrial customers - thereby improving their economic competitiveness and sustainability, and to provide a more affordable and sustainable electricity service to surrounding communities, the Government of Haiti with IDB support and USAID will finance the design, supply, installation, commissioning, operation & maintenance (O&M) of two solar photovoltaic (PV) power plants: 8-MWp (IDB funded), and one 4-MWp (USAID funded).
- 1.12. The 8MWp PV plant will supply about 60% of the PIC demand during the day and will produce an excess of energy during noon and on weekend when the operation of the PIC is reduced. The 8MWp capacity was optimized to respond to the industrial demand and the need to reach a lower tariff of USD 0.16/kWh. An excess of energy is observed during the first years of operations of the solar plant. The energy surplus is estimated at about 4,500 MWh per year. During the first years of operation only 25% of the surplus will be utilized during daytime, by the residential users outside the PIC. As of Q1 2021, this bidding process is in its final stage.
- 1.13. To enable surplus PV electricity to be made available to end-users, a Battery Energy Storage System (BESS) will be added to the PIC's power system. The GOH, with support from the IDB through resources from the Clean Technology Fund (CTF), will finance a 6MWh BESS which will allow solar-based electricity from the 8MWp SPP to be supplied during nighttime. This provides an opportunity for the TEP operator to replace fossil-based electricity by SPP/BESS electricity at a much lower cost level, while avoiding substantial volumes of greenhouse-gas (GHG) emissions. The optimum size of the BESS is calculated at about 6 MWh (energy storage) and 3 MW (power load). The investment cost (CAPEX) is about USD 2.5 million.
- 1.14. The execution of operation HA-L1140 and HA-G1045 has suffered significant delays mainly due to the complex situation in the country. The growing instability generated an atmosphere of distrust in the private sector reducing its interest in participating in bidding processes and causing obstacles for private companies, government institutions and the Executing Unit (EU) to function normally because of fuel shortages and insecurity.

2. About this position

- 2.1. We are looking for a Consultant, to support the GoH to advance in the execution of operations HA-L1140 and HA-G1045, and coordinate its execution with other related activities financed by operations "Battery Energy Storage System to maximize the use of surplus energy from a solar photovoltaic plant located in the Caracol Industrial Park of Haiti" ([HA G1048](#)), and "Development of sustainable energy access projects in Haiti with private sector participation" ([HA-G1053](#)).
- 2.2. The specific objective is to strengthen the capacity evaluation and contracting of the UTE in the operation, and in particular support the review and preparation of tools for financial modeling, the review and preparation of contracting documents, including technical, financial, and legal specifications, putting together bidding documents and other tasks for critical contracting processes in the operation, to assist the [Autorité Nationale de Régulation du Secteur de l'Energie \(ANARSE\)](#) in [developing the procedures and documentation for the right to operate PIC's electricity system for the next 5 years, which must be granted by ANARSE before the commissioning of the SPP](#), and the preparation of the selection process for a long-term operator for the system.

3. What you'll do:

- 3.1. Preparation of a work plan that includes the introduction, objectives, work methodology, resources, strategies and schedule of the activities to be carried out during the consultancy.
- 3.2. Characterization of the electrical infrastructure contracts in the selecting processes of (a) an Operator for the new Caracol's electric system will be composed of a 8 MW and a 4 MW the Solar PV Power Plants and a 10MW thermal power plant and a distribution network within and outside of the PIC; and (b) the design and installation of a the solar PV power plants and a Battery Storage System (BESS) at the PIC.
- 3.3. Review of studies carried out and analysis of existing methodologies on financial modeling for contracts in the selecting processes of (a) an Operator for the new Caracol's electric system will be composed of a 8 MW and a 4 MW the Solar PV Power Plants and a 10MW thermal power plant and a distribution network within and outside s of the PIC; and (b) the design and installation of a the solar PV power plants and a Battery Storage System (BESS) at the PIC.
- 3.4. Develop the procedures and documentation for the right to operate PIC's electricity system for the next 5 years, which must be granted by ANARSE before the commissioning of the SPP license for the operation of PIC's power plants for the next five years, and the preparation of the selection process for a long-term operator for the system.
- 3.5. Draft contract terms for the right to operate, and develop a methodology for tariff adjustments to be used during the O&M phase of the contract.
- 3.6. Update existing methodologies on financial modeling for contracts in the selecting processes of (a) an Operator for the new Caracol's electric system will be composed of a 8 MW and a 4 MW the Solar PV Power Plants and a 10MW thermal power plant and a distribution network within and outside s of the PIC; and (b) the design and installation of a the solar PV power plants and a Battery Storage System (BESS) at the PIC.
- 3.7. Prepare technical and financial models for the long-term operation of the system.
- 3.8. Identify specific challenges faced in the selecting processes, analyzing and proposing effective solutions for them, taking into account economic and technical viability and analysis of the economic and technical parameters that influence decisions for the development of the project.
- 3.9. Proposal of an optimal strategy for the development in the selecting processes of (a) an Operator for the new Caracol's electric system will be composed of a 8 MW and a 4 MW the Solar PV Power Plants and a 10MW thermal power plant and a distribution network within and outside s of the PIC; and (b) the design and installation of a the solar PV power plants and a Battery Storage System (BESS) at the PIC, taking into account risks and restrictions.

4. Key Activities

- 4.1. Carry out the following activities, without prejudice to any other activities that may be necessary to achieve the consulting objective defined above:
- 4.2. Prepare the Work Plan.
- 4.3. Carry out the activities inherent to the consultancy, in close coordination with the UTE and the IDB, to provide technical, procurement and financial support to the UTE as necessary;
- 4.4. Specifically review the information related to the preparation and execution of the HA-L1140 and HA-G1045 Financing Program.

- 4.5. Identify and become aware of the existing regulations and manuals for design, construction, operation and maintenance in force in the sector.
- 4.6. Review of pre-contractual documents, basic and detailed engineering studies and electrical designs for projects, for the acquisition of goods and works contained in the Acquisition Plan of operation HA-L1140 and HA-G1045.
- 4.7. Develop tools and criteria for financial evaluation and risk assignments, which allow evaluating offers of services, goods or materials contained in the Acquisition Plan of operation HA-L1140 and HA-G1045, in collaboration with UEP staff and specialists; according to the requirements contained in the Technical Specifications (ET) and other documents included in the respective bidding documents.
- 4.8. Define areas of opportunity and improvement in project structures. Based on previous work, this activity will identify priority areas to create a line of focus or priority areas where the operation can deliver the best value when providing infrastructure. These activities include support to review the financial guarantees, risk allocation and governance arrangements of the operation's projects.
- 4.9. Provide recommendations to improve execution and results/impacts of the operation;
- 4.10. Assist with training and review in the management of financial evaluation tools, monitoring and program execution in collaboration with UTE staff and specialists;
- 4.11. Public dissemination. The consultant will participate with the Bank in two workshops, disseminating the work with key actors. This activity will include the production of material for the Bank to continue publicly disseminating lessons learned and recommendations.

5. Expected Outcome and Deliverables

5.1. The following reports must be submitted:

- 1 The work plan
- 2 Initial report on financial modeling technical support provided to support the implementation of key activities, and the evaluation, identified risks and recommendations.
- 3 Interim report on financial modeling technical support provided to support the implementation of key activities, and the evaluation, identified risks and recommendations.
- 4 Final Report with main findings and recommendations.

All draft reports will be sent in Word version for IDB review and comments.

The documents will be presented in Spanish and in an electronic file that can be edited (Microsoft Word and Microsoft Excel).

All final reports must be sent to the IDB, in Spanish and in PDF format.

Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.

6. Project Schedule and Milestones

- 6.1. The schedule of deliverables and milestones for this project are:
- 6.2. Presentation and approval of the Work plan, 20 days after signing the contract.
- 6.3. Presentation and approval of the Initial report, 1 month after signing the contract.
- 6.4. Presentation and approval of the Interim report, 6 months after signing the contract.
- 6.5. Presentation and approval of the Final report, 8 months after signing the contract.

7. Reporting Requirements

- 7.1. The products will be delivered to the Bank in English language and in an electronic file in formats compatible with MS Office and Adobe Reader. The calculation excel sheets, reports, graphs, tables and any other document produced for this Consulting will be part of the products owned by the Bank.
- 7.2. All reports must be submitted to the Bank in an electronic file. The report must include a cover page, main document, and all annexes. Files in Zip format will not be accepted as final reports due to the regulations of the Archives Management Section.

8. Acceptance Criteria

- 8.1. For each report, the Consultant must hold a presentation meeting with the Bank team, and other interested parties designated by the Team Leader. It should summarize and describe the methodology used, information collected, findings and recommended design, among other key aspects. The presentation may be developed through Videoconference.
- 8.2. The meeting must be held 5 days after the delivery of each report, in order to give the Bank team time to have observations. To finalize the acceptance of the deliverable, the Consultant must make the respective modifications to the report and present a new version with the observations addressed.

9. Payment Schedule

- 9.1. Disbursements will be made according to the following scheme:

- First payment: 10% after approval of the work plan;
- Second payment: 30% after approval of the initial report;
- Third Payment: 30% after approval of the interim report;
- Final payment: 30% after approval of the final report.

The total amount of the contract includes all expenses that will be incurred for the development of this consultancy, including travel and per diem.

10. Supervision

- 10.1. The Consultant must hold periodic virtual or in-person meetings to agree on the work methodology and present the most relevant progress of the study. In particular, there will be a start-up workshop, a final workshop and one with the presentation of each report. Additionally,

there must exist periodic communications with the parties, through virtual meetings or email, with a brief description of the progress of the activities carried out, in order to maintain fluid communication, which allows the optimal development of the study. These communications will be complementary to the virtual meetings in which the Consultant presents their content in detail.

- 10.2. The Energy Division (INE/ENE) of the Bank have designated the teams and their respective project leaders, with whom the Consultant will carry out formal communication between the parties. Consulting follow-up meetings will be held monthly (or as frequently as the project leaders determine as deemed necessary). The Products will be reviewed and approved by the Energy Division (INE/ENE) of the Bank.
- 10.3. The Consultant will work under the supervision of Wilkferg Vanegas (INE/ENE), specialist in the energy sector.

11. What you'll need

- **Education:** Master's degree (or equivalent advanced degree) in engineering or other fields relevant to the responsibilities of the role.
- **Experience:** At least 10 years of progressive experience in financial modeling for energy projects.
- **Languages:** Proficiency in Spanish and English, spoken and written, is required. Additional knowledge of French and Portuguese is preferable.

12. Key skills:

- Learn continuously.
- Collaborate and share knowledge.
- Focus on clients.
- Communicate and influence.

13. Requirements:

- **Citizenship:** You are either a citizen of Haiti or a citizen of one of our 48-member countries with residency or legal permit to work in Haiti.
- **Consanguinity:** You have no family members (up to the fourth degree of consanguinity and second degree of affinity, including spouse) working at the IDB, IDB Invest, or IDB Lab.

14. Type of contract and duration:

- **Type of contract:** Products and External Services Consultant (PEC), Lump Sum.
- **Length of contract:** 8 months.
- **Work Location:** On site / Port au Prince Haiti / Country of the Consultant

Security constraints and civil disturbance from the current socioeconomic crisis in Haiti may result in project execution delays due to travel restrictions for international consultants who cannot travel to Haiti. In that regard, several of the activities to be financed by this TC will be performed mostly remotely, with site visits when possible. Also, the Team will schedule periodic virtual meetings with all the stakeholders and consultants involved. In this way, the team will verify that the

consultants have access to all the information necessary to carry out their work promptly. The bank, with support from CHA, will monitor the security situation in the country to identify the periods when travels to Haiti represent a lower risk for international consultants.

What we offer

The IDB group provides benefits that respond to the different needs and moments of an employee's life. These benefits include:

- A **competitive compensation** package.
- A flexible way of working. You will be evaluated by deliverable.

Our culture

At the IDB Group we work so everyone brings their best and authentic selves to work, willing to try new approaches without fear, and where they are accountable and rewarded for their actions.

Diversity, Equity, Inclusion and Belonging (DEIB) are at the center of our organization. We celebrate all dimensions of diversity and encourage women, LGBTQ+ people, persons with disabilities, Afro-descendants, and Indigenous people to apply.

We will ensure that individuals with disabilities are provided reasonable accommodation to participate in the job interview process. If you are a qualified candidate with a disability, please e-mail us at diversity@iadb.org to request reasonable accommodation to complete this application.

Our Human Resources Team reviews carefully every application.

About the IDB Group

The IDB Group, composed of the Inter-American Development Bank (IDB), IDB Invest, and the IDB Lab offers flexible financing solutions to its member countries to finance economic and social development through lending and grants to public and private entities in Latin America and the Caribbean.

About IDB

We work to improve lives in Latin America and the Caribbean. Through financial and technical support for countries working to reduce poverty and inequality, we help improve health and education and advance infrastructure. Our aim is to achieve development in a sustainable, climate-friendly way. With a history dating back to 1959, today we are the leading source of development financing for Latin America and the Caribbean. We provide loans, grants, and technical assistance; and we conduct extensive research. We maintain a strong commitment to achieving measurable results and the highest standards of integrity, transparency, and accountability.

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