REQUEST FOR EXPRESSIONS OF INTEREST
CONSULTING SERVICES

Selection #: RG-T3725-P006
Selection Method: Full Competitive Selection
Country: Haiti
Sector: Other
Funding – TC #: RG-T3725
TC name: Support for the Preparation of Energy Projects Aimed at Employment and Economic Recovery in Latin America and the Caribbean (LAC)
Description of Services: the general objective of this consultancy is to develop a national plan for productive uses of electricity (PUE) in Haiti which entails a comprehensive analysis and support to the Government of Haiti (GoH) and the IDB.

Link to TC document: https://www.iadb.org/en/project/HA-T1275

The Inter-American Development Bank (IDB) is executing the above mentioned operation. For this operation, the IDB intends to contract consulting services described in this Request for Expressions of Interest. Expressions of interest must be delivered using the IDB Portal for Bank Executed Operations (http://beo-procurement.iadb.org/home) by: May 20, 2021, 5:00 P.M. (Washington D.C. Time).

The general objective of the consulting services ("the Services") is to develop a national plan for productive uses of electricity (PUE) in Haiti. Therefore, the comprehensive analysis includes: a) understanding and estimating the size of the current and potential market for PUE applications; b) identifying high-potential value chains and productive use applications in specific locations, including potential investment opportunities in line with the sector's absorptive capacity; c) analyzing the main barriers to market growth; d) undertaking a stakeholder mapping to understand the current capabilities, priorities, activities and future plans of other actors in the sector, and recommend potential partnerships that could help to ensure the success of PUE interventions; e) providing recommendations for how market barriers might be overcome; and f) designing and implementing activities as well as designing at least 10 PUE pilots, as available funding allows. Activities can include capacity building and trainings. The assignment is expected to commence in July 2021 and take approximately 6 months to complete.

Eligible consulting firms will be selected in accordance with the procedures set out in the Inter-American Development Bank: *Policy for the Selection and Contracting of Consulting firms for Bank-executed Operational Work* - GN-2765-1. All eligible consulting firms, as defined in the Policy may express an interest. If the Consulting Firm is presented in a Consortium, it will designate one of them as a representative, and the latter will be responsible for the communications, the registration in the portal and for submitting the corresponding documents.

The IDB now invites eligible consulting firms to indicate their interest in providing the services described above in the draft summary of the intended Terms of Reference for the assignment. Interested consulting firms must provide information establishing that they are qualified to perform the Services (brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc.). Eligible consulting firms may associate in a form of a Joint Venture or a sub-consultancy

agreement to enhance their qualifications. Such association or Joint Venture shall appoint one of the firms as the representative.

Interested eligible consulting firms may obtain further information during office hours, 09:00 AM to 05:00 PM, (Washington D.C. Time) by sending an email to: Wilkferg Vanegas (wilkfergv@iadb.org), in copy Emilio Angulo (ejangulo@iadb.org).

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Draft Summary of Terms of Reference

1. Background and Justification

1.1. 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 10.5 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 40%. 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 of the connection costs.

1.2. To close the access gap, the Government of Haiti (GoH) has been working in close collaboration with IDB and WB in, *inter alia*: (i) the development of decentralized off-grid RE solutions, namely for mini-grids through the *Programme Haïtien d'Accès des communautés Rurales à l'Energie Solaire* (PHARES) that was launched in September 2020; (iii) the development of RE for electricity generation in the Industrial Park of Caracol (PIC) located in the North East of the country and the integration of larger RE into one of EDH's isolated grids; (iv) the establishment of the Off-Grid Electricity Fund (OGEF) to provide commercial financing and grants to private sector for RE projects; and (v) the strengthening of the planning and management capacities of the main sector institutions such as the *Autorité Nationale de Régulation du Secteur Énergétique* (ANARSE) and the *Ministère des Travaux Publics, Transports et Communications* (MTPTC).

1.3. In addition to these efforts, the GoH and IDB in liaison with other partners are exploring the possibility of expanding the scope of work to design, finance and implement innovative solutions and models for productive uses of electricity (PUE) in communities where energy access interventions are being rolled out; with the development of a national plan for PUE as the starting point of this work stream.

1.4. There is a need to better understand the full range of PUE applications, relevant to households, small to medium sized enterprises (SMEs) and (mini-) grid operators, which is steadily expanding as a result of technological innovation. With only a few dozen watts of solar electricity, entrepreneurs are generating income by mobile phone charging or powering hair clippers, while larger solar systems power village cinemas. In agriculture there are commercial opportunities for solar powered milk chilling, egg incubation, milling and refrigeration, which can require several kilowatts. Solar powered water pumps for drinking water and

irrigation are being customized for the needs of smallholder farmers and ever increasing in popularity.

1.5. Given the nature of Haiti's rural economy, the assignment is expected to focus primarily on agriculture and on opportunities for solar irrigation and small-scale agricultural processing, but the assignment should also explore other high-potential commercial or industrial sectors if these are identified.

1.6. The assignment aims to fill the knowledge gap regarding current and potential uses of PUE technology, and how market barriers might be overcome so that growth in PUE can be accelerated. The national plan for PUE will therefore lay out these elements and make recommendations on which PUE applications to prioritize and how. It is envisaged to design at least 10 pilots. PUE products are defined as those that: a) serve a single customer, which may be a household, small business or cooperative or that serve multiple clients; b) boost productivity and income generation activities, contributing to economic growth.

1.7. The assignment will be coordinated with the Ministry of Public Works, Transportation and Communications (MTPTC), through its Energy Cell (as the lead entity), with other relevant line Ministries and the respective departments of the IDB to ensure complimentary activities are adequately captured in the national plan for PUE and its findings and recommendations are disseminated in a timely fashion for maximum positive benefit.

2. Objectives

2.1. The general objective of this consultancy is to develop a national plan for productive uses of electricity in Haiti which entails a comprehensive analysis and hence support to GoH and IDB in: a) understanding and estimating the size of the current and potential market for PUE applications; b) identifying high-potential value chains and productive use applications in specific locations, including potential investment opportunities in line with the sector's absorptive capacity; c) analyzing the main barriers to market growth; d) undertaking a stakeholder mapping to understand the current capabilities, priorities, activities and future plans of other actors in the sector, and recommend potential partnerships that could help to ensure the success of PUE interventions; e) providing recommendations for how market barriers might be overcome; and f) designing and implementing activities as well as designing at least 10 PUE pilots, as available funding allows. Activities can include capacity building and trainings.

2.2. Consequently, the national plan for PUE will aim at improving livelihoods, developing income generating activities and increasing income growth in Haiti, especially in areas where energy access interventions are being developed.

3. Scope of Work and Key Activities

The work will be carried out primarily through surveys, interviews, focus groups, with different actors, including women's organizations, business organizations, cooperatives, local authorities, and local consumers, etc. GIS mapping may be used to help better understand the geographical distribution of stakeholders and PUE activities/opportunities.

To fulfil the objective of this consultancy, the firm must carry out the following activities, without prejudice to those that, according to the progress of the work, are necessary to achieve these:

1.1. Current Market:
- **1.1.1. Current market size/scope**
- **1.1.2. Technologies & Products**
- **1.1.3. Demand**
- **1.1.4. Business Models**
- **1.1.5. Investments to date**

This section should estimate the overall size of the current PUE market, what components and products (their sources of power generation: AC grid, DC connected to (mini-) grids or stand-alone applications) are being sold, in what volumes and at what prices and in what sizes of settlements. It should give an assessment of the level of quality in the market. It should map the value chains that represent key markets for the sector, such as agricultural value chains,

fishing, tourism, communications, entertainment and others. It should also specify the most common productive use applications within each value chain, such as irrigation, cooling, freezing, phone-charging, water-heating, water purification, television, etc. It should present a detailed analysis of the demand and the key customer segments. There is also a need to understand income levels and the extent to which affordability is a barrier to market entry, as well as current access to finance and the terms on which different customer segments might be able to gain access to finance to invest in PUE. This section should also present a detailed analysis of the main business models being used by companies in the sector to serve different customer segments, including how they do sales, marketing, logistics, distribution, and consumer financing. An assessment of the position and role of women in the value chain, both as customers and employees, should also be included. Finally, it should estimate the level of investment that has gone into Haiti's PUE sector to date, the type of investment (e.g. grant, working capital loan or equity, in different currencies), and sources of investment (e.g. donors, private foundations, impact investors, commercial investors, local Banks/MFIs, international banks).

1.2. Stakeholder Mapping:

- **1.2.1. Private Sector**
- **1.2.2. Government**
- **1.2.3. Civil Society**
- **1.2.4. Donors and Aid agencies**

This section should outline the main players in the PUE space and related sectors. There is a need to understand the kinds of organizations that could: a) encourage smallholder farmers to adopt PUE technologies; b) invest in PUE on behalf of farmers; c) support farmers in adapting their business models and farming practices to maximize impact of PUE. Such stakeholders could include cooperatives, agribusinesses or other actors in agricultural value chains. There is a need to understand the full range of stakeholders involved in supplying and buying from smallholder farmers in high-potential value chains, in order to identify potential customers and partners to work with to promote PUE. Same analytical approach should be applied to households, SMEs and (mini-) grid operators. On the government side, there is a need to better understand the work of the MTPTC, EDH and others like the Ministry of Agriculture and DINEPA in relation to PUE markets.

1.3. Potential Market:

- **1.3.1. Potential market size/scope**
- **1.3.2. Value chains and productive use applications**
- **1.3.3. Potential Demand**
- **1.3.4. Investment Opportunities, identifying at least 10 PUE pilots**

This section should estimate the size of the potential market for PUE technologies. The potential market is made up of potential customers who could make enough savings, or generate sufficient additional revenue from adopting PUE, to enable them to cover the cost of investing in a PUE technology if this was paid for over a reasonable timeframe. High-potential productive use applications in specific value chains should be identified at sub-national level, reflecting the different predominant forms of economic activity around the country, using cost-benefit analysis and modelling payback periods. The risks associated with developing a market for PUE should be assessed and mitigation measures should be laid out. A common risk of promoting PUE could be arrival of the electricity grid, or the provision of water for irrigation from an alternative source. The Consultant will therefore consider the current and planned electricity grid coverage over the next 5-10 years, and its impact on the potential market for PUE technologies, as well as potential future irrigation initiatives. Where possible, the physical location of PUEs will be identified, as this will impact the distance between power generation and the PUE, which can significantly add to costs.

The assessment should estimate how much the market would grow if these high-potential opportunities were taken advantage of over the next 5-10 years. Market growth should be thought about in terms of customers served (i.e. either individual farmers or SMEs, or aggregated groups – whoever the PUE company sells the product to), households and individuals benefiting from savings or increased revenue, increases in the numbers of PUE units sold, and levels of investment needed – at both customer and PUE company levels. Particular attention should be paid to the 'replacement market', made up of customers currently using diesel generators for productive uses, for whom the transition to solar power could generate significant savings – which is widely considered to be low-hanging fruit. If diesel is subsidized, potential subsidy savings through reduced demand for diesel as a result of PUE market growth

should be considered. Beyond this, the business case for simultaneous investment in energy producing and energy consuming technologies should be analyzed. For example – what is the business case for a smallholder farmer to invest in a solar pump and an irrigation pipe network, and how big is this potential market? What is the business case for investing in a solar pump, an irrigation pipe network and a borehole, and how big is this market? This section should also look at the potential market from an investor perspective. Finally, the sector should also look from the PUE distributor perspective to understand current ability to meet demand and estimate the level of investment that would be required in order to meet increased demand under status quo, low, medium and high growth scenarios.

On the PUE pilots, in close coordination with GOH and IDB, the Consultant will select the most promising value chains and PUE appliances in sites and define most appropriate business models and required interventions from stakeholders. At least 10 pilots will be designed during this Assignment.

1.4. Main market barriers:

- **1.4.1. PUE Customers**
- **1.4.2. PUE Distributors**
- **1.4.3. Financial Sector**
- **1.4.4. Policy and the Enabling Environment**

Focusing on high-potential productive uses in specific value chains, this section should analyze the key barriers to market growth at customer, distributor and policy levels. For the identified customer segments, there is a need to understand current levels of awareness around PUE technologies, and the cost-benefit of investing. There is a need to understand the gap between access to finance and currently available finance, which would be needed to enable a PUE investment. There is also a need to understand the capacity gaps which would need to be filled if customers are to secure the savings or additional revenues required to ensure loans could be repaid on time. There may be other customer-level barriers in addition to consumer awareness, access to finance, and capacity to successfully integrate PUE technologies into business models. If so, they should also be included and analyzed. Building on previous sections analyzing current access to finance and looking at the potential market from an investor perspective, it will be important to analyze the key barriers preventing PUE businesses from being able to access finance. For example, financial institutions may have a limited understanding of PUE technologies, the business case for adoption of PUE technologies or the sector's long-term growth potential. There may be other constraints relating to liquidity, collateral requirements or risk appetite. Finally, at policy level there may be other key factors preventing market growth. For example, taxes such as VAT or import duty may be significantly increasing the cost of PUE products rendering them unaffordable to customers. Poor quality products or components may be undermining confidence in, or demand for, PUE technology.

1.5. Recommendations:

- **1.5.1. PUE Customers**
- **1.5.2. PUE Distributors**
- **1.5.3. Financial Sector**
- **1.5.4. Policy and the Enabling Environment**
- **1.5.5. Collaboration and Coordination**
- **1.5.6. Roadmap and Design of at least 10 PUE pilots**

This section should provide a brief literature review outlining lessons learnt and best practice from across the Caribbean, sub-Saharan Africa and elsewhere in the promotion of PUE technologies and business models. Building on this it should make recommendations with regards to how best to accelerate the growth of Haiti's PUE market, with a focus on building consumer awareness and demand, improving access to finance for both customers and distributors, and meeting the training and support needs of all stakeholders to ensure investments deliver the savings, revenue increases and boosts to productivity required to repay loans in full and on time. Specific recommendations should be made regarding how to best deliver operation and maintenance services in order to ensure long-term sustainability. Recommendations should wherever possible be grounded in best practice from previous initiatives to support the PUE sector in other countries. Where best practice does not exist given the market's early stage of development, innovative approaches should be proposed, supported by a clearly articulated rationale. The consultant will include a qualitative assessment of how the recommendations are likely to impact vulnerable groups such as women, children, etc.

The recommendations above should be combined and incorporated into a roadmap that lays out the detailed design of at least 10 PUE pilots and their implementation over time.

4. Results and Expected Products

4.1. Produce an inception report, propose the different methodologies per required activity.
4.2. Conduct surveys and expert interviews and prepare a draft report for sections 1, 2 and 3 (Current Market, Stakeholder Mapping, Potential Market), that include tables of results from the initial data collection phases of the project, such as list of appliances, outcomes of initial surveys, names of manufacturers, distributors and importers identified, names of key financial institutions identified, Conduct surveys and expert interviews. GIS mapping may be used to help better understand the geographical distribution of stakeholders and PUE activities/opportunities.
4.3. Provide a mid-project Webinar and a presentation of sections 1, 2 and 3 to the Energy Cell, IDB team and partners/stakeholders.
4.4. Prepare a draft report of sections 4 and 5 (Main Market Barriers, Recommendations).
4.5. Provide a presentation of sections 4 and 5 to the Energy Cell, IDB team and partners/stakeholders, as deemed useful.
4.6. Complete the full draft report.
4.7. Prepare the final version of the report (including annexes).
4.8. Provide a final presentation.

The Consultant will participate in the workshops, meetings and/or tele/videoconferences that the IDB organizes regarding the development of the activities within the framework of this consultancy.

All documents should be submitted in French, whereas the final version of the report should also be submitted in English. The final report should cover all tasks outlined in the ToR and have the Bank's and external reviewers' comments incorporated.