IDB Inter-American Development Bank

REQUEST FOR EXPRESSIONS OF INTEREST
CONSULTING SERVICES

Selection #: RG-T3725-P007
Selection Method: Full Competitive Selection
Country: Brazil
Sector: Energy
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 specific objective of this consultancy is to develop an optimal georeferenced Plan to facilitate universal access to the electricity service, within the framework of the More Lights for the Amazon, to the beneficiaries (consumer units) who have to be identified and characterized in remote and isolated areas of the legal Amazon in the States of Amazonas, Acre, Pará and Roraima

Link to TC document: https://www.iadb.org/en/project/RG-T3725

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: July 1st, 2021, 5:00 P.M. (Washington D.C. Time).

The consulting services ("the Services") complement the information and analysis carried out by Ministry of Energy and Mines (MME) for the conception, design and implementation of the More Lights for the Amazon Program. As a result of the consultancy, it is expected to have a georeferenced and optimal electrification plan, based on Geographic Information System (GIS), to facilitate the provision of electricity to remote and isolated communities in the States subject to the consultancy, considering the various options for supplying the electrical service based on the implementation of individual photovoltaic systems and PV mini-grids. The term of the contract will be for 10 months from the date of signature of the contract.

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-2765-4. 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: Carlos Echevarria (carlose@iadb.org), in copy Javier Cuervo (javiercu@iadb.org) and Emilio Angulo (ejangulo@iadb.org).

Inter-American Development Bank
Division: Energy (INE/ENE)
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DRAFT SUMMARY OF TERMS OF REFERENCE

1. BACKGROUND AND JUSTIFICATION

By May 2021, Brazil's Program for universal access to electricity, "Lights for All", had already connected more than 3,540,000 families, around 17 million people, who now benefit from the public service of electricity. The vast majority of which are served with a conventional grid extension. However, the Program has not yet managed to reach the population residing in remote regions of the Amazon, where, in the same period, only 2,200 homes were served in remote areas of the state of Pará with the use of photovoltaic systems.

Unlike services with extension of conventional grids, whose procedures and goals are already established, the service of remote regions requires different treatment, with the application of clean and sustainable energy generation technologies, and strong integration with the productive processes characteristic of each community, so that investments in generation systems reach the main objective of using electricity as a vector for socioeconomic development.

In view of the new challenges presented by the process of universal access to electricity, it is imperative to implement a new Program to specifically meet the demands of communities located in remote regions, characterized by a large dispersion of consumers and absence of economies of scale or density, and which, for technical, economic or environmental reasons, are not economically viable to be connected through conventional networks.

Therefore, on February 5th, 2020, through Decree nº 10.221, the National Program for Universal Access and Use of Electric Energy in the Legal Amazon – "More Lights for the Amazon" was instituted, with the purpose of providing electricity service to the Brazilian population residing in remote regions of the Legal Amazon. The Legal Amazon in Brazil includes the States of Acre (AC), Amapá (AP), Amazonas (AM), Mato Grosso (MT), Pará (PA), Rondônia (RO), Roraima (RR), Tocantins (TO) e parts of Maranhão (MA), with an area of over 5,217,423 Km^2.

The estimated demand for the More Lights for the Amazon Program is 219,000 families, which is about 876,000 people without access to the public electricity service, in this area.

The installation of systems to provide electric energy will enable the social and economic development of these communities, which are, for the most part, riverside, indigenous and quilombolas. Finally, it is important to note that from this Program, these communities will be able to receive various public policies, such as the construction of health posts, schools and other actions that have as a basic premise the availability of electricity to be put into practice.

Finally, the arrival of electricity will contribute to reduce the social and economic vulnerability of

these communities, to strengthen the exercise of citizenship, to improve well-being and to provide dignity for the lives of these people.

2. OBJECTIVE

The specific objective of this consultancy is to develop an optimal georeferenced Plan to facilitate universal access to the electricity service, within the framework of the More Lights for the Amazon, to the beneficiaries (consumer units) who have to be identified and characterized in remote and isolated areas of the legal Amazon in the States of Amazonas, Acre, Pará and Roraima.

3. SCOPE OF SERVICE

The products of this consultancy complement the information and analysis carried out by Ministry of Energy and Mines (MME) for the conception, design and implementation of the More Lights for the Amazon Program. As a result of the consultancy, it is expected to have a georeferenced electrification plan, based on GIS information, to facilitate the provision of electricity to remote and isolated communities in the States subject to the consultancy, considering the various options for supplying the electrical service with individual photovoltaic systems or PV mini-grids.

4. MAIN ACTIVITIES

The consulting firm must carry out all activities necessary to achieve the objectives, including the requests listed below and in a non-restrictive manner.

Activity 1. Based on information from satellite, aerial photography, and any other information that may be obtained from MME, other government agencies, concessionary companies from the States and/or other Brazilian or international institutions, carry out an georeferenced identification, in a GIS Platform, of potential beneficiaries, at the consumer unit level, to be served by the Program in the States of Amazonas, Acre, Pará and Roraima; including homes, schools, churches, health posts and other units for community or productive usage.

Activity 2. Based on the information available with respect to the socioeconomic and social aspects of the consumer units, or from communities or populations that have similar characteristics to these and from which relevant information can be inferred, estimate the potential energy consumption profiles and demand growth of the consumer units (including the potential productive uses of electricity in the target populations).

Activity 3. Based on the inputs that activities 1 and 2 provide, the consultant should make use of a georeferenced electricity model to formulate an optimal (lowest cost) plan for universal electrification in areas to be served off-grid. The model will be GIS based with spatial planning for each consumer unit. In addition, the plan will contain the size and key technical specifications of either individual photovoltaic systems or mini-grids for the supply of electricity to each consumer unit, according to the established conditions and parameters of the More Lights for the Amazon Program. The plan will also quantify the investment, operation and maintenance costs of electricity supply in isolated communities in the States subject to the consultancy. The plan should give due consideration to the technological, economic and logistical aspects of the installation, operation and maintenance of the individual photovoltaic systems or PV mini-grids.

The georeferenced rural electrification model must be capable of operating at the level of each individual or identified consumer unit to specify the choice for the provision of electricity through a mini-grid or an individual photovoltaic system. The solution must be GIS displayed with granular information resulting from the optimization of lowest cost provided by the electrification.

Activity 4. The consultant will also carry out the following estimations: i) amount of liters of fuel that would be consumed if all communities were served with a diesel electric power generation systems; ii) vegetation suppression in the Amazon Forest if all communities were served by extending a conventional electricity grid; and iii) amount of greenhouse gases that are no longer emitted due to the use of renewable electric energy generation systems to serve the communities benefiting from

the More Lights for the Amazon Program

Activity 5. During the consultancy, the firm must organize workshops for the presentation of intermediate and final results. The consultant will also engage in periodic meeting with representatives of the MME and the IDB to review progress.

5. EXPECTED DELIVERIES

Product 1. Inception report with detailed workplan

Product 2. Database with location, quantification and characterization by type (households, schools, health centers, etc.) and by location (indigenous areas, preservation and environmental protection areas, etc) of the potential beneficiaries of the More Lights for the Amazon Program in the States of Amazonas, Acre, Pará and Roraima.

Product 3. Baseline data of the Program's beneficiary population (consumer unit level) regarding potential energy consumption of domestic, community and productive beneficiaries by State.

Product 4. Preliminary report of the universal access plan for the States of Amazonas, Acre, Pará and Roraima in areas to be served with off-grid solutions.

Product 5. Final report of the universal access plan for the States of Amazonas, Acre, Pará and Roraima in areas to be served with off-grid solutions.

6. FORM OF DELIVERY OF EXPECTED REPORTS

The results will be delivered in the form of structured reports and all data used must be made available in Excel spreadsheets.

7. TERM OF THE CONTRACT

The term of the contract will be for 10 months, counting from the date of signature of the contract.

8. QUALIFICATIONS

Companies interested in participating in the consultancy must have access to georeferenced planning software that complies with: (i) carrying out the planning and modeling operation at the level of the Program's beneficiary consumer unit (it is not acceptable to work only with aggregated information at the community or municipal level), and displaying the results in GIS format; (ii) develop the design and calculation of the technological alternatives, considering the technical, economic and socio-environmental restrictions of the various options for supplying the electric service, as well as the technical specifications and budgets of the equipment necessary to put in place these solutions to the consumer units of the States under analysis; (iii) incorporating topography into the optimization process; and (iv) obtaining generation and supply projects outside the grid, using optimization and simulation techniques.

The company interested must demonstrate experience in the use and application of the optimization software that it proposes to use in the planning processes of access to electricity, especially in remote and isolated areas.