**TC ABSTRACT**

**I. Basic Project Data**

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| ▪ Country/Region: | BOLIVIA/CAN - Andean Group |
| ▪ TC Name: | Support to Change the Energy Matrix in Bolivia |
| ▪ TC Number: | BO-T1356 |
| ▪ Team Leader/Members: | Ballón, Sergio (INE/ENE) Team Leader; Echevarría, Carlos (INE/ENE) Alternate Team Leader; Orellana, Miguel; and Toriz, Miriam (VPC/FMP); Aramayo, Carlos (CAN/CBO); Sawada, Emilio; and Márquez, Fidel (INE/ENE). |
| ▪ Taxonomy: | Client Support |
| ▪ Number and name of operation supported by the TC: | N/A |
| ▪ Date of TC Abstract: | 01 Apr 2020 |
| ▪ Beneficiary: | Ministry of Energies |
| ▪ Executing Agency: | Inter-American Development Bank (IDB) |
| ▪ IDB funding requested: | US$250,000.00 |
| ▪ Local counterpart funding: | US$0.00 |
| ▪ Disbursement period: | 36 months |
| ▪ Types of consultants: | Individuals; Firms |
| ▪ Prepared by Unit: | INE/ENE - Energy |
| ▪ Unit of Disbursement Responsibility: | CAN/CBO - Country Office Bolivia |
| ▪ TC included in Country Strategy (y/n): ▪ TC included in CPD (y/n): | Yes Yes |
| ▪ Alignment to the Update to the Institutional Strategy 2010-2020: | Productivity and innovation; Institutional capacity and rule of law; Environmental sustainability |

**II. Objective and Justification**

2.1 The objective of this Technical Cooperation (TC) is to support the Government of Bolivia (GoB) in the preparation of technical, economic and environmental studies for the development of renewable energy projects in rural areas in Bolivia, contributing to: (i) the increased use of alternative energies and diversification of the generation matrix; (ii) the reduction of fossil fuel consumption and its cost to the GoB; and (iii) the promotion of building infrastructure using alternative energies in rural areas during and after COVID-19.

2.2 The IDB has published the Public Policy Recommendations for Latin America and the Caribbean (LAC) to confront the COVID-19, recommending not to neglect rural areas as they will be greatly affected by the ensuing health and economic crises. These recommendations include helping rural areas in expanding social programs and providing sustainable infrastructure, ensuring access – and continuity – for key public services during and after confinement. This goes in line with the Bank’s mandate to promote more investment-based infrastructure for employment and economic development.

2.3 Water, sanitation, energy and transport are key for any economic recovery during and after COVID-19. Investments in renewable energy (RE) and distributed generation are a source of employment. For example, solar generation is a low-cost RE technology with few delays during construction and very reliable for job growth.

2.4 Bolivia's electric power system is comprised of the National Interconnected System (SIN) and Isolated Systems (IS), with 26 hydroelectric plants and 14 thermal power plants. SIN’s power capacity is more than 2,500 megawatts (MW). IS (representing 14% of total generation) supplies power to communities not connected to SIN and its power capacity is 390 MW, with up to 174,000 users. Electricity generation in IS reaches 719 GWh, 86% from fossil fuels (i.e. Diesel and Natural Gas). However, there are several (mainly in the department of Beni) that even with installed electric power have no fuel to provide a 24-hour service but only from 6:00 p.m. to 11:00 p.m. This limits productive activities, education and health services.

2.5 Diesel for IS demands roughly 52 million liters per year, imported and administered by Yacimientos Petrolíferos Fiscales Bolivianos (YPFB). Diesel is supplied to operators at US$0.15 per liter. Costs to import diesel is US$1.27 per liter. The GoB subsidizes the difference, spending US$55 million each year on diesel for IS. The GoB wants to reduce this subsidy, in part by interconnecting IS to SIN through power lines and installing RE generation. In 2014, the National Electricity Company (ENDE) installed the 5MW PV plant in Cobija, saving US$2 million a year in diesel subsidies. In 2017, the Yucumo-San Buenaventura transmission line (Beni) was energized and a hybrid solar system set up in the town of El Espino 64kWp (Santa Cruz), allowing to save up to US$3.5 million a year between them.

2.6 From 2015 to 2019, the GoB executed an IDB grant “Program for Rural Electrification with Renewable energy" (BO-X1013) for RE hybrid-solar projects at IS to help mitigate high levels of diesel consumption in rural areas; providing a reliable 24/7 electricity supply and generating opportunities for productive and innovative entrepreneurship. The Remanso and Puerto Villazón solar-hybrid projects saved around 95% in diesel consumption. The Ministry of Energies (MoE) seeks RE projects in IS to address subsidized diesel and lack of reliable electricity to boost productive electricity use and promote the rural economy.

2.7 To address these challenges, the MoE has requested the IDB a TC to support activities for energy matrix diversification. The TC will attend this through financial, technical, economic and environmental studies for RE projects in IS and encourage solutions for the period after COVID-19. Addressing diesel subsidy disparities, development of a reliable electric service (critical in rural areas under the COVID-19), job creation and productive electricity use while taking advantage of what was learned under BO-X1013.

**III. Description of Activities and Outputs**

3.1 **Component I. Support to the technical, economic and environmental studies for renewable energies Bolivia.** Finances at least five studies to determine the best RE alternatives that can be implemented to reduce diesel consumption, improve levels of quality, safety and performance of electricity in IS. Also, a cost-benefit analysis of the proposed RE alternatives including environmental-social studies to meet the Bank's environmental sustainability policies. Additionally, it will finance an action plan for the local productive uses with electricity and job generation.

3.2 **Component II. Dissemination and workshops to promote renewable energies.** Includes support for training, dissemination, through workshops to promote the correct and sustainable use of renewable energies for Bolivia. Also considering the development of knowledge products such as technical notes and publications.

**IV. Budget**

**Indicative Budget**

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| --- | --- | --- | --- |
| **Activity/Component** | **IDB/Fund Funding** | **Counterpart Funding** | **Total Funding** |
| Support to the technical, economic and environmental studies for renewable energies Bolivia | US$200,000.00 | US$0.00 | US$200,000.00 |
| Dissemination and workshops to promote renewable energies | US$50,000.00 | US$0.00 | US$50,000.00 |
| **Total** | **US$250,000.00** | **US$0.00** | **US$250,000.00** |

**V. Executing Agency and Execution Structure**

5.1 The technical responsibility will fall upon the Energy Division (INE/ENE), which will receive support from the Bank Country Office in Bolivia (CBO). The focal point designated and responsible for executing the TC will be the Energy Specialist, Sergio Ballón, with support from other ENE’s energy specialists.

5.2 At the request of the beneficiary and in line with the Operational Guidelines for Technical Cooperation Products (GN-2629-2), the Bank will act as the executing agency (EA) for the TC. This condition has been established as a special circumstance considering that the benefited entity has limited operational capacity to properly execute, in time and manner, the activities of this TC. The Bank will be responsible for the selection and contracting of both consulting firms and individual consultants; in accordance with the policies for the selection of consultants (GN-2765-1), operational guidelines (OP-1155-4) for the contracting of consulting firms and human resources standards (AM-650) for the hiring of individual consultants. Additionally, the Financial Management Guide OP-273-6 (GN 2811) will be applied. The initial procurement plan provides information on the foreseen contracts, their applicable monitoring, and contracting methods. In accordance with the Operational Guidelines for Technical Cooperation Products, Revised Version (GN-2629-1), the TC is classified as a Client Support product.

**VI. Project Risks and Issues**

6.1 The major risk for the execution of this TC is the coordination of the various beneficiaries and institutions involved in the project. In order to mitigate this risk, the IDB will act as the EA for this technical cooperation generating the dialogue and spaces for cooperation and coordination required among the institutions and contribute to strengthening the involvement of the beneficiaries. The COVID-19 may have impact in the execution, especially for activities that may require site visits and face to face contacts. If necessary, the Bank will support the personnel involved in such activities by providing protection equipment and logistic support.

**VII. Environmental and Social Classification**

7.1 The ESG classification for this operation is "undefined".