

TC ABSTRACT

I. Basic Project Data

▪ Country/Region:	ECUADOR/CAN - Andean Group
▪ TC Name:	Increasing Resiliency of Power Infrastructure in Ecuador
▪ TC Number:	EC-T1361
▪ Team Leader/Members:	THYS, PIERRE KENOL (INE/ENE) Team Leader; ECHEVERRIA, CARLOS BLADIMIR (INE/ENE) Alternate Team Leader; CARDENAS VALERO, JUAN CARLOS (INE/ENE); SUBER, STEPHANIE ANNE (INE/ENE); ESCUDERO, CAROLINA (VPC/FMP); VILLAFUERTE, ALBA CECILIA (CAN/CEC); HIDROVO, MARCELA VANESSA (VPC/FMP); LOCANO GODINEZ, MARIA DEL PILAR (VPC/FMP); MOLINA BALDEON, MARIA JULIA (INE/ENE); HARATSU, MISA (INE/ENE); DAZA DONOSO, PABLO JOSE (CAN/CEC); BONIFAZ URQUIZU, JEANETTE (INE/ENE); SEMINARIO, ANA CECILIA (ITE/ITE); JIMENEZ MOSQUERA, JAVIER I. (LEG/SGO); DE LA BASTIDA, JOSE LUIS (VPS/ESG)
▪ Taxonomy:	Operational Support
▪ Number and name of operation supported by the TC:	Program for the Reconstruction of Electricity Infrastructure in Areas Affected by the Earthquake in Ecuador-EC-L1219 - 3.Support for the Execution Support for the Advancement of the Energy Matrix Transition in Ecuador-EC-L1223 - 3.Support for the Execution
▪ Date of TC Abstract:	02 Oct 2018
▪ Beneficiary:	Ministry of Energy and Non-Renewable Natural Resources (MERNNR)
▪ Executing Agency:	INTER-AMERICAN DEVELOPMENT BANK
▪ IDB funding requested:	\$ 700,000.00
▪ Local counterpart funding:	\$ 0.00
▪ Disbursement period:	36 months
▪ Types of consultants:	Firms; Individuals
▪ Prepared by Unit:	Energy
▪ Unit of Disbursement Responsibility:	Country Office Ecuador
▪ TC included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Institutional capacity and rule of law; Environmental sustainability

II. Objective and Justification

- 2.1 The proposed Technical Cooperation (TC) will support the Government of Ecuador (GoE), through the Ministry of Energy and non-Renewable Natural Resources (MERNNR for its Spanish acronym), to secure and advance quality and efficiency of power infrastructure by strengthening the supervision capacity, implementation of resilient measures for works in the projects and enhancement of energy efficiency in agroindustry included in the following loan operations: (i) Supporting the Advancement of Energy Matrix Transition in Ecuador , EC-L1223, co-financed project with JICA under the CORE scheme; which allows continuity to the reinforcement and expansion projects of the National Transmission System (SNT for its Spanish acronym) and the National Distribution System (SND for its Spanish acronym), reinforcing the national

transmission infrastructure for greater energy exchange in the region; facilitating the priority use of electricity in the agroindustry sector, through the reinforcement and expansion of the SND; propitiating the increase of the level of electric coverage in the country ; promoting the implementation of energy efficiency projects; and implementing a strategy to promote gender equality in the electricity sector, and (ii) Program for the Reconstruction of Electricity Infrastructure in Areas Affected by the Earthquake in Ecuador, EC-L1219, whose objective is to contribute by improving the living conditions of the population settled in the areas affected by the earthquake of April 16, 2016 in the country, supporting a plan for the reconstruction of the electrical system, based on resilient infrastructure standards, to reduce the time response of the sector, in the face of natural disasters in the areas affected by the earthquake. The specific objectives of the TC are: (i) to support MERNNR in the supervision of transmission and distribution projects, throughout the entire life cycle (including the design, procurement and execution stages); (ii) Adoption of competences in energy efficiency projects, applied to the public and private electric sector; (iii) to support the Ecuadorian Government in promoting the inclusion of a regulatory framework, technical norms and procedures to incorporate, in the electric system, an infrastructure designed under resilience and earthquake resistance concepts, according to the recent experience of the earthquake in Ecuador (iv) support in the adaptation and homologation to seismic conditions, of technical specifications and costs for construction, equipment and materials for the transmission and distribution systems; (v) support the shrimp agroindustry in the transition to the national electricity grid and in the development of training plans for management, socio-environmental and procurement, from a resiliency stand-point; and (vi) Strengthening of distribution companies, through the dissemination of knowledge acquired in energy efficiency practices and in resilient electrical design concepts.

- 2.2 The TC will provide MERNNR with the necessary technical and financial resources for the strengthening of local capacities, such as Project Implementation Agencies (PIA) and Project Execution Units (PEU) of loan operations EC-L1223 and EC-L1219. It will help with works supervision and implementation of resilient infrastructure in the power sector, including the following beneficiaries: (i) MERNNR, as head of the sector; (ii) CELEC EP-Transelectric, the state-owned enterprise (SOE) in charge of the National Transmission System; and (iii) ten SOEs in charge of power distribution. It will consequently add value to the current efforts of the Ministry by implementing early on a project level management that focuses on: (i) performance and achievement of results; (ii) high quality and resiliency standards; and (iii) good inter-agency coordination mechanisms.

III. Description of Activities and Outputs

- 3.1 Component I. Strengthening institutional capacity for project supervision: Activity 1. Will support the supervision capacity of MERNNR for project execution, with the hiring of technically specialized consultants, according to the type of works included in loan operations EC-L1223 and EC-L1219, with periodical technical visits to each project site. Activity 2. Support the MERNNR to enhance its capacity to supervise in a timely manner the correct application of the environmental guidelines included in loan operations EC-L1223 and EC-L1219. This support will occur with the hiring of specialized consultants in environmental management of projects and in applicable legislation for this type of works. Component II. Development of institutional capacities in energy efficiency practices: Activity 3. The MERNNR will be supported in the adoption of knowledge of the institutional, conceptual, and strategic framework, which allows promoting energy efficiency in industry and society, to achieve a greater competitiveness. Activity 4. Will allow the MERNNR to acquire knowledge in efficient energy alternatives, based on best international practices and use of new technologies for the development of productive processes of the agroindustry sector, given the

current production needs under current environmental standards. Component III. Supporting the Improvement of the National Resiliency Framework for the Ecuadorean power sector: Activity 5. Support the MERNNR in the management for the creation and inclusion of a regulatory framework, which associates technical standards, specifications, and procedures to apply in the electricity system. Activity 6. This activity, to be carried out through specialized consultancies, will allow the MERNNR to acquire knowledge of national and international practices in the design of electrical projects, with resilience standards, in terms of: i) possibilities of quick recovery of the service, in case of unexpected interruptions; ii) have a recommended level of seismic resistance capacity (earthquake resistant characteristics of structures, equipment and parts as important components of the power electrical infrastructure). Activity 7. Support for the MERNNR that is materialized through contracted specialists, national and / or foreign, which together with executing professionals of the MERNNR and its Operating Units, train / verify compliance with standards, technical specifications and constructive recommendations, for the construction of works with earthquake resistant features. Strengthening of distribution companies, through the dissemination of knowledge acquired in energy efficiency practices and in resilient electrical design concepts. Component IV. Knowledge Dissemination and Institutional Strengthening for Resilience: Activity 9. Support the dissemination of best practices for the inclusion of quality and resilient measures throughout the project cycle of power sector programs, by financing workshops (technical, procurement and kickstart workshops), publication of norms and sector documents to disseminate resiliency practices (Electricity Master Plan, Power Sector Statistics).

- 3.2 **Component I: Strengthening institutional capacity for project supervision.** support the supervision capacity of MERNNR for project execution, and support the MERNNR to enhance its capacity to supervise in a timely manner the correct application of the environmental guidelines included in loan operations EC-L1223 and EC-L1219
- 3.3 **Component II: Development of institutional capacities in energy efficiency practices.** The objective of this component is to support the PIA (Projects Implementing Agency) and PEU (Projects Execution Unit) of loan operations EC-L1223 and EC-L1219
- 3.4 **Component III: Supporting the Improvement of the National Resiliency Framework for the Ecuadorean power sector.** This component seeks to advance in the establishment of resiliency normative framework for the power sector
- 3.5 **Component IV: Knowledge Dissemination and Institutional Strengthening for Resilience.** Capacity building programs for MERNNR to ensure resilient power infrastructure
- 3.6 **Component V: Administration.** This component will fund the administration of the TC
- IV. Budget**

Indicative Budget

Activity/Component	IDB/Fund Funding	Counterpart Funding	Total Funding
Strengthening institutional capacity for project supervision	\$ 150,000.00	\$ 0.00	\$ 150,000.00
Development of institutional capacities in energy efficiency practices	\$ 150,000.00	\$ 0.00	\$ 150,000.00
Supporting the Improvement of the	\$ 200,000.00	\$ 0.00	\$ 200,000.00

National Resiliency Framework for the Ecuadorean power sector			
Knowledge Dissemination and Institutional Strengthening for Resilience	\$ 100,000.00	\$ 0.00	\$ 100,000.00
Administration	\$ 100,000.00	\$ 0.00	\$ 100,000.00

V. Executing Agency and Execution Structure

- 5.1 The technical responsibility will be INE/ENE and will receive support from the IBD's Country Office in Ecuador (CEC).
- 5.2 Given the diversity of topics to be covered in the Technical Cooperation, following the request of the Government of Ecuador, the IDB through its country office in Ecuador will carry out the execution of the TC in close collaboration with MERNNR. In this way, the IDB will be responsible for the hiring of firms and individual consultants in accordance with the policies of the Human Resources Department, using its Policy for the selection and contracting of consultants financed by the Bank (GN-2765-1), the operational guidelines (OP-1155-4) for the contracting of consulting firms, and the human resources standards (AM-650) for the hiring of individual consultants. In addition, the Financial Management Guide - OP - 273-6 (GN-2811) will be applied. In accordance with the Operational Guidelines for Technical Cooperation Products, Revised Version (GN-2629-1), this TC is classified as an Operational Support product. Since the Bank will be the executor of the TC, no audits are required or contemplated.

VI. Project Risks and Issues

- 6.1 With the outcomes from this TC, the power sector will advance in the need to generate and apply a regulation with seismic-resistant characteristics in the electrical transmission and distribution systems. In addition, the sector will have technical specifications and approved costs, which allows standardizing the power infrastructure with quality levels and seismic-resilience. Due to the need to interact with different government entities, a risk is being considered in terms of time required for responses and approvals by actors involved, which will be mitigated with a timely coordination of the relevant ministerial authorities.

VII. Environmental and Social Classification

- 7.1 The ESG classification for this operation is "C".