PUBLIC
SIMULTANEOUS DISCLOSURE

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

REGIONAL

ECUADOR – PERU 500-KILOVOLT ELECTRICITY INTERCONNECTION, ECUADORIAN SECTION

(RG-L1140)

LOAN PROPOSAL

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Annex II	Results Matrix
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LINKS

REQUIRED

Multiyear execution plan / Annual work plan
Monitoring and evaluation plan
Environmental and social management report
Procurement plan

OPTIONAL

1. Economic analysis of the project
2. Financial management and fiduciary issues
3. Gender analysis
4. Project operating manual
5. Integration analysis
6. Public Utilities Policy
7. Executive summary of the preliminary draft project
8. Financial analysis of the borrower
9. Socioenvironmental documents
10. S Curve Execution Planning Annex
11. Safeguard Policy Filter and Safeguard Screening Form

ABBREVIATIONS

CELEC EP	Empresa Pública Estratégica Corporación Eléctrica del Ecuador [Electricity Corporation of Ecuador, Strategic Public Company]
CPFP	Planning and Public Finances Code
DDPLAC	Deep Decarbonization Pathways in Latin America and the Caribbean
EIB	European Investment Bank
ESA	Environmental and social analysis
ESIA	Environmental and social impact assessment
ESMP	Environmental and social management plan
GEP	Generation expansion plan
GWh	Gigawatt hour
IET	International electricity transactions
ILO	International Labour Organization
kV	Kilovolt
kWh	Kilowatt hour
MEM	Ministry of Energy and Mines
MVA	Megavolt-ampere
MW	Megawatt
NTS	National transmission system
PMU	Program management unit
RARP	Resettlement and asset restitution plan
SIEPAC	Sistema de Integración Eléctrica para América Central [Central American Electrical Integration System]
SINEA	Sistema de Interconexión Eléctrica Andina [Andean Electrical Interconnection System]
SOFR	Secured Overnight Financing Rate
TEP	Transmission expansion plan

PROJECT SUMMARY

REGIONAL
ECUADOR – PERU 500-KILOVOLT ELECTRICITY INTERCONNECTION, ECUADORIAN SECTION
(RG-L114)

<table>
<tr><th colspan="5">Financial Terms and Conditions</th></tr>
<tr><td colspan="3">Borrower and guarantor:</td><td colspan="2">Flexible Financing Facility[a]</td></tr>
<tr><td colspan="3">Empresa Pública Estratégica Corporación Eléctrica del Ecuador [Electricity Corporation of Ecuador, Strategic Public Company] (CELEC EP), with the sovereign guarantee of the Republic of Ecuador</td><td>Amortization period:</td><td>23 years</td></tr>
<tr><td colspan="3">Executing agency:</td><td>Disbursement period:</td><td>5 years</td></tr>
<tr><td colspan="3">CELEC EP, through the Transelectric business unit</td><td>Grace period:</td><td>7.5 years [b]</td></tr>
<tr><td>Source</td><td>Amount (US$)</td><td>%</td><td>Interest rate:</td><td>SOFR-based</td></tr>
<tr><td>IDB (Ordinary Capital):</td><td>125 million</td><td>47.4</td><td>Credit fee:</td><td>[c]</td></tr>
<tr><td>European Investment Bank (EIB) cofinancing:[d]</td><td>125 million</td><td>47.4</td><td>Inspection and supervision fee:</td><td>[c]</td></tr>
<tr><td>Local counterpart:</td><td>13.62 million</td><td>5.2</td><td>Weighted average life:</td><td>15.25 years</td></tr>
<tr><td>Total:</td><td>263.62 million</td><td>100</td><td>Approval currency:</td><td>U.S. dollars</td></tr>
<tr><th colspan="5">Project at a Glance</th></tr>
<tr><td colspan="5">Project objective/description: To strengthen regional energy integration, promoting the sustainable development of the electricity sector. The specific objectives are to: (i) strengthen the electricity interconnection between Ecuador and Peru; and (ii) increase electricity transactions between Ecuador and Peru (paragraph 1.45).</td></tr>
<tr><td colspan="5">Contractual conditions precedent to the first disbursement of the loan: The borrower will provide evidence to the Bank that: (i) the program operating manual (optional link 4) has been approved and entered into force under the terms previously agreed with the Bank. This should include, inter alia, the environmental and social requirements and incorporate as an annex the environmental and social management plan for the transmission line and the construction of the Pasaje substation, the environmental and social management plan for the expansion of the Chorrillos substation, and the resettlement and asset restitution plan; (ii) the Program Management Unit has been created and its minimum necessary key staff, including a general coordinator, a procurement specialist, a financial specialist, a monitoring and evaluation specialist, a social specialist, and an environmental specialist, has been appointed and/or hired; and (iii) the joint financing agreement with the European Investment Bank (EIB) has been signed (paragraph 3.3).
Special contractual conditions of execution: (i) prior to launching Component I bidding, the borrower will have the documentation necessary to initiate the funds certification process for such processes; (ii) prior to using the resources for each output under Subcomponent 2.1, the Borrower will submit the investment plan and execution schedule to the Bank for its no objection, identifying the final scope of the activities to be conducted; and (iii) see the special environmental and social contractual conditions for execution in Annex B of the environmental and social management report (required link 3) (paragraph 3.4).</td></tr>
<tr><td colspan="5">Exceptions to Bank policies: The following partial waivers are requested: (i) to the Operational Policy on Guarantees Required of the Borrower (OP-303) regarding the Republic of Ecuador providing a guarantee for the counterpart obligations and positive covenants; and (ii) to the Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank (document GN-2349-15), so that suppliers, contractors, and goods originating from countries that are not members of the Bank can participate in procurement processes cofinanced with EIB resources (paragraph 3.6).</td></tr>
<tr><th colspan="5">Strategic Alignment</th></tr>
<tr><td colspan="2">Challenges:[e]</td><td colspan="3">SI ☐ PI ☒ EI ☒</td></tr>
<tr><td>Crosscutting themes:[f]</td><td colspan="2">GE ☒ and DI ☒</td><td colspan="2">CC ☒ and ES ☒</td><td>IC ☐</td></tr>
</table>

[a] Under the terms of the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes to the amortization schedule as well as currency, interest rate, commodity, and catastrophe protection conversions. The Bank will take operational and risk management considerations into account when reviewing such requests.

[b] Under the flexible repayment options of the Flexible Financing Facility, changes to the grace period are permitted provided that they do not entail any extension of the original weighted average life of the loan or the last payment date as documented in the loan contract.

[c] The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges in accordance with the relevant policies.

[d] The joint financing resources will complement the Bank's resources and are expected to be provided by the EIB (US$125 million), with estimated approval in the first quarter of 2023. These funds will be provided directly to CELEC EP, which will be responsible for using and administering them in accordance with the terms and conditions set out in the respective loan contract.

[e] SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

[f] GE (Gender Equality) and DI (Diversity); CC (Climate Change) and ES (Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. DESCRIPTION AND RESULTS MONITORING

A. Background, problem addressed, and rationale

1.1 **Regional electricity integration.** In Latin America, electricity integration processes have unfolded under plans and models that have evolved with the first crossborder transmission lines and binational hydroelectric plants in the 1970s to subregional initiatives such as the Central American Electrical Integration System (SIEPAC) that has been operating with a regional electricity market since the 2010s. Providing technical and financial support since their inception, the IDB has been leading the various integration processes (paragraph 1.36), fostering the development of projects that make electricity exchanges viable with a hemispheric vision. Electricity integration has contributed to a more secure supply and greater cost optimization due to increased efficiency and competition,[1] and also to a greater penetration of renewable energy, which in turn drives progress in the decarbonization of electricity systems as required by the Paris Agreement.[2]

1.2 **Operational considerations regarding electricity interconnections in the Andean region.** Ecuador has electricity interconnections with Colombia and Peru, which have two modes of operation: (i) asynchronous, where the interconnection is not permanent, and maneuvers must be planned to protect the electricity systems that they interconnect; and (ii) synchronous, operating permanently, which enables international electricity transactions (IET) to be dispatched with short-term planning, thereby enabling greater flows between systems.

1.3 Electricity interconnections between Ecuador and Colombia began in 1999, with the entry into operation of a 138 kilovolt (kV) transmission line between the Tulcán substation in Ecuador and Panamericana substation in Colombia, which operates asynchronously. Subsequently, from 2003 to 2008, two 230 kV transmission lines[3] operating synchronously were added between the Pomasqui (Ecuador) and Jamondino (Colombia) substations, achieving nameplate capacity[4] of 776 megavolt-amperes (MVA).[5]

1.4 In addition to the links with Colombia, since 2004 Ecuador has had an interconnection with Peru through a 230kV transmission line with a nameplate capacity of 332MVA. It connects the Machala substation in Ecuador and Zorritos substation in Peru and operates asynchronously. As such, transfers are limited (paragraph 1.15) and have to be scheduled in advance.[6]

1.5 **Regulatory considerations.** Ecuador operates its interconnections under the supranational regulations of the Andean Community, which provides the general

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1 Trade on the SIEPAC regional electricity market between 2013 and 2019 produced net profit of approximately US$364 million. Evaluación del beneficio económico de la operación del MER en los mercados eléctricos nacionales de América Central (2020).

2 IDB and Deep Decarbonization Pathways in Latin America and the Caribbean (DDPLAC) Consortium, (2019). Getting to Net-Zero Emissions.

3 Since 2021, this interconnection is from the Pimampiro electricity substation.

4 Nameplate capacity is the maximum recommended operating capacity for transfers of a transmission line.

5 CELEC EP Transelectric, 2021. Declaración de Límites de Transferencia de las Instalaciones del SNT – Líneas de Transmisión.

6 Ecuador also has international low-voltage distribution lines that connect with Colombia and Peru; electricity is exchanged between distribution companies and meet demand in border areas.

framework that enables the execution of trade agreements to arrange IETs. The Decisions[7] of the Andean Community have been evolving and maturing over the last two decades[8] and set out the general framework for the subregional interconnection, in which transitional regulatory arrangements are also determined.

1.6 Complementing the supranational Decisions is a framework of binational regulations that define technical mechanisms for the exchange of electricity and operational information, as well as the procedures for the commercial scheduling, operating, and settling the transactions.

1.7 With the Bank's technical support,[9] 2017 saw the approval of Decision 816 (D816), which harmonizes the Decisions and binational frameworks, creating a single regional regulatory and statutory framework. The following principles are highlighted in D816: (i) optimization of surpluses once the domestic market is supplied; (ii) efficient use of available energy resources; (iii) leveraging of the energy complementarity of the countries; and (iv) free, transparent, and reciprocal access to information for operation of the market and the planning of international links.

1.8 D816 sets market rules for: (i) realization of IETs with 24-hour planning; (ii) preparation of bids in day-ahead and intra-day markets; (iii) congestion pricing; and (iv) establishment of financial obligations. D816 also creates the Andean Short-Term Electricity Market (MAERCP) for the exchange of surpluses on the basis of economic dispatch, and three regulations are developed for its operation.[10]

1.9 **Institutional considerations.** In 2011, ministers, deputy ministers, and senior officials in the electricity sector from Bolivia, Chile, Colombia, Ecuador, and Peru agreed to create the Andean Electrical Interconnection System (SINEA), an integration initiative in which the IDB has taken a recognized leadership role and to which the IDB has been providing technical and financial support.[11] SINEA, whose highest authority is a Council of Ministers with an annually rotating presidency *pro tempore*, aims to deepen and expand electricity exchanges in order to take advantage of the complementarity of its member countries' energy resources and to increase quality and security in the electricity supply.

1.10 In 2014 SINEA adopted the first roadmap, which was updated in 2020.[12] It includes three stages to implement a Regional Andean Electricity Market: (i) consolidation of bilateral transactions; (ii) establishment of a subregional electricity market

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7 The Decisions are instruments that are part of the Andean regulations applicable to its member countries.

8 Andean Community Decisions D536 (2002), D720 (2009), D757 (2011), D789 (2013), D811 and D815 (2016), and D816 (2017).

9 Technical-cooperation operations ATN/CN-13202-PE and ATN/OC-13350-RG.

10 The regulations of the regional, operational, and trade coordinators currently under development by the technical groups of the Governments of Peru, Ecuador, and Colombia, respectively, with IDB support are estimated to be approved in late 2022.

11 Since 2012, the IDB has supported the SINEA initiative with technical-cooperation resources: ATN/OC-13350-RG, ATN/FG-15606-RG, ATN/OC-15607-RG, and ATN/OC-18449-RG.

12 The 2020-2030 roadmap sets activities and goals to achieve SINEA's objectives, including the entry into force of the Andean electricity regulations, the definition of infrastructure projects, and studies to drive forward the creation of the Regional Andean Electricity Market.

between Colombia, Ecuador, and Peru harmonized through a regional regulatory framework; and (iii) full functioning of the Regional Andean Electricity Market, with a regulatory framework consolidated among the countries. The roadmap also identifies new interconnection works for the operation of a regional market.

1.11 **Current state of regional electricity exchanges.** Until 2015, Ecuador was mostly an electricity importer, but as of 2016, as a result of major investments in hydroelectric projects, it reversed the balance and became a net exporter, mainly to Colombia, taking advantage of the available interconnection capacity and modes.

1.12 IETs between Ecuador and Colombia are performed without contracts on an occasional market. In the 2003-2015 period, Ecuador imported 12,736 gigawatt hours (GWh) and exported 361 GWh, with a favorable balance for Colombia. However, from 2016 to 2021, its exported 4,354 GWh and imported only 789 GWh.

1.13 Transactions between Ecuador and Peru began in 2005 to cover emergency situations, due to the lack of trade agreements, but since 2015 they have been carried out under export framework contracts. Exchanges on the Machala-Zorritos transmission line are interruptible due to the asynchronous operation of the line (paragraph 1.4). In the 2005-2019 period, Ecuador imported 255 GWh and exported 37 GWh to Peru. Ecuador has been a net exporter since 2017[13] and from 2017 to 2019 recorded exports of 184 GWh, having not imported from Peru in that period.[14]

1.14 Electricity exchanges between Ecuador and Colombia accounted for 1.38% of the trade of all goods and services in the last five years, and 2.48% in 2019. Electricity transactions between Ecuador and Peru accounted for only 0.03% of trade for the last five years and 0.01% in 2019.[15] These figures show that these exchanges in relation to total trade are very low despite the complementarity of energy resources. In part, this is due to interconnection limitations.

1.15 **Limitations in the current Ecuador–Peru interconnection.** The current interconnection does not take advantage of the nameplate capacity of the transmission line due to its asynchronous operation, since the international links between these countries connect long distances and the topology at the ends of each country's electricity systems is radial with very long branches,[16] which precludes its synchronous operation.

1.16 Studies carried out by system operators in both countries show that the maximum transfer limit from Ecuador to Peru is 90 megawatts (MW) and 70 MW in the opposite direction, i.e. approximately 28% on average of its nameplate capacity.[17] In contrast, the Ecuador-Colombia interconnection operates synchronously with a

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13 Ecuador's last import from Peru was for 37.7 GWh in 2016.

14 Opportunity transactions.

15 In 2019, Ecuador's transactions with Colombia amounted to US$2,727,000 and its transactions with Peru totaled US$1,887,000. 2019 Annual Report, Central Bank of Ecuador.

16 These branches extend up to 190 km from the border in Ecuador and more than 400 km in Peru.

17 This considers a power factor of 0.85 and a nameplate capacity of the transmission line of 332 MVA.

maximum transfer capacity[18] from Ecuador to Colombia of 460 MW and 450 MW in the opposite direction, representing approximately 81% of its nameplate capacity.[19]

1.17 Given the technical limitations of the current Ecuador-Peru interconnection, energy exchanges are restricted during periods of higher demand and higher generation costs, thus limiting transactions to specific periods.

1.18 Consequently, the average loading capacity[20] for the Ecuador-Peru interconnection in 2019 was nearly 12%, while its level of use[21] was 23%.[22] The use factor of this transmission line is low compared to the average values of the two transmission lines of the interconnection between Ecuador and Colombia, which operates synchronously and whose average loading capacity in the same year was over 41% and its level of use close to 58%.[23] These values indicate low use of the current Ecuador-Peru interconnection, due to the aforementioned operational restrictions.

1.19 The exchanges between Ecuador and its neighbors, which in the 2010-2021 period were 406 GWh between Ecuador and Peru and 9,559 GWh between Ecuador and Colombia (a 1:23 ratio), are not directly related to the nameplate interconnection capacity between those countries (332 MVA vs. 776 MVA, or a 1:2 ratio). The higher level of exchanges between Ecuador and Colombia is due in part to the synchronous mode of operation, which provides a better use of the transmission lines' nameplate capacity, thus maximizing their use with continuous exchange scheduling.

1.20 **Electricity system in Ecuador.** In 2021, Ecuador's generation facilities had an effective generation capacity of 8,101 MW (62.6% hydroelectric, 35% thermal, and 2.4% nonconventional renewable) and reached a maximum demand of 4,208 MW.[24] Net electricity generated in the national interconnected system amounted to 28,023 GWh, of which 92% came from renewable energy plants, 6.7% from thermal power stations and 1.3% from the interconnection with Colombia.[25]

1.21 Ecuador's hydroelectric facilities have limited reservoir capacity. In the rainy season (October to May), the system supplies nearly 90% of hydropower.[26] The

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18 This refers to the operating limit of the transmission line to maintain the reliability of the electricity systems it interconnects.

19 This considers a power factor of 0.85 and a combined nameplate capacity of the two transmission lines of 664 MVA.

20 Loading capacity is the ratio between the maximum recorded operating capacity and its nameplate capacity.

21 The level of use of a transmission line is the value of the maximum capacity used in the year.

22 Estadística anual y multianual del Sector Eléctrico Ecuatoriano, 2021.

23 Although transfer capacity improved in 2020 due to investments made by both countries, complementary investments are still required in the southern part of Colombia's electricity system.

24 Rendición de Cuentas 2021, national electricity operator.

25 Idem.

26 In July 2019 (low rainfall), hydroelectric generation accounted for 86% and thermal sources accounted for 13.9%. In December 2019 (rainy season), hydroelectric and thermal generation accounted for 92.2% and 7.7%, respectively.

Ministry of Energy and Mines (MEM) has launched an investment plan to cover generation and transmission needs that mobilizes complementary investment from the private sector in the country. It has also proposed establishing a trust that will serve as a payment guarantee for these new investments. The generation expansion plan (GEP) includes the development of four blocks of nonconventional renewable energy (wind and solar) totaling 1,400 MW, and the short-term transmission plan calls for the development of 290 km of new transmission lines. In both instances, the contracts will be awarded through public selection processes. The aim is to ensure the supply of electricity, mobilize private sector investment, and maintain the reliability of the electricity system.

1.22 **Electricity system in Peru.** In 2021, Peru's effective generation capacity was 12,841 MW (40.7% hydroelectric, 53.9% thermal, and 5.4% nonconventional renewable), and peak demand reached 7,173.03 MW. Energy generated amounted to 53,990.35 GWh, of which 61.6% came from renewable energy[27] and 38.4% from fossil-fuel power plants. Peru has abundant natural gas and, therefore, the thermal generation segment is highly competitive.

1.23 **Outlook for the electricity sectors and exchanges between Ecuador and Peru.** The electricity systems of Ecuador and Peru have experienced significant growth in their infrastructure in the last decade, which has increased access in Ecuador from 93% to 97% and from 82% to 97% in Peru.[28] Nevertheless, there are still gaps[29] that both countries plan to close in their respective expansion plans. Ecuador's projected growth in electricity demand averages 4% per year for the 2022-2031 period. To meet this demand, the GEP foresees investments to supply consumption, and in 2032 production is estimated to be approximately 48,294 GWh—99% with renewable energy and 1% from fossil fuels. Peru's projected demand averages 4.3% per year for the same period. The GEP in Peru envisages the installation of new power plants, which will generate an estimated 81,226 GWh in 2032: 67% from renewable energy and 33% from fossil fuels.

1.24 The Nationally Determined Contributions[30] submitted by Ecuador and Peru to the United Nations Framework Convention on Climate Change set a raise in electricity generation using renewable energy as a target. Recent studies[31] on decarbonization pathways for both countries confirm that, together with the widespread electrification of end uses such as transportation, the increase in the share of renewable energy (to cover nearly 100% of generation in 2050) will enable them to meet their commitments to reduce emissions under the Paris Agreement.

1.25 Against this backdrop, increased electricity transmission capacity will be key to absorb the hourly and seasonal variability of the new generation capacity using

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[27] 56.8% hydroelectric, 3.34% wind, and 1.49% solar. Comité de Operación Económica del Sistema Interconectado Nacional (COES), 2021.

[28] Energy Hub (IDB, 2019).

[29] 2020 Report on Development in the Americas: From Structure to Services. This report identifies the progress and gaps in the provision of infrastructure services in these countries.

[30] Primera NDC República de Ecuador, 2019; NDC de Perú Actualización 2021–2030, 2020. In the case of Peru, the target of increasing the renewable energy share appears in the Catálogo de Medidas de Mitigación.

[31] DDPLAC Consortium, 2020. *Policy lessons from the DDPLAC*. Quiros-Tortos et al., 2021. Costos y beneficios de la carbono-neutralidad en Perú.

renewable energy, and interconnections will become a key instrument for the two countries to move forward in their respective decarbonization pathways, as provided in the so-called super-grid scenario for the future of the electricity sector.[32] Projected demand growth and the GEPs foresee that both countries will have energy surpluses available, which can be used as long as they have higher capacity interconnection infrastructure that can operate synchronously. The potential benefits of interconnecting grids include: (i) security of supply, to take advantage of the resources, technologies, and fuels for generation from other electricity grids; (ii) economic exchange, allowing the cheapest generating units to be dispatched; and (iii) reduction of environmental pollution, to share various forms of generation, giving preference to the least polluting generating units.[33]

1.26 Among the new interconnection infrastructure works set out in the SINEA roadmap (paragraph 1.10) is a new 500 kV transmission line between Ecuador and Peru planned to operate synchronously. In 2016, IDB resources[34] financed the studies for the preliminary electricity interconnection project covered by this financing and which are the basis for defining the works and action plans that the governments of the two countries have been developing.

Figure 1. Map of the location for the project's Ecuadorian section

1.27 This operation will finance the Ecuadorian section of the interconnection between Ecuador and Peru, which consists of a 500 kV single-circuit transmission line, with towers prepared for a second circuit and an intermediate substation. The nameplate capacity of the first circuit will be 1,732 MVA; it will initially operate with a transmission capacity of 600 MW. With additional investments by the

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32 2020 Report on Development in the Americas: From Structure to Services. The super-grid scenario, based on large-scale generation and identifies the integration of national systems as the main mechanism to meet the growing demand for electricity, and will thus supply most of the demand in 2050.

33 Andrade, 2018. Modelos de interconexión internacional de sistemas eléctricos entre EE. UU. y México.

34 Loan 3167/OC-EC and technical-cooperation project ATN/CN-13202-PE for the Ecuadorian and Peruvian sections, respectively.

two countries, this capacity could be raised to a maximum of 1,000 MW[35] in the medium term.

1.28 The project consists of a 279.8 km section in Ecuador, which is made up of two segments: (i) 205 km from the Chorrillos substation to the new Pasaje substation; and (ii) 74.8 km from the new Pasaje substation to the border with Peru, including the construction of this substation with a transformation capacity of up to 600 MVA. The works will be owned by Empresa Pública Estratégica Corporación Eléctrica del Ecuador [Electricity Corporation of Ecuador, Strategic Public Company] (CELEC EP)[36] and operated by its Transelectric business unit.

1.29 The Peruvian section has advanced studies and consists of a 264 km transmission line from the border with Ecuador to the Piura Nueva substation. The bidding process for this stretch is under the private concession model that includes 30 years of commercial operation, plus the design period to prepare both the socioenvironmental and engineering studies, and for construction of the project. The bid call was issued in late 2020, while the evaluation and award requests will be submitted in 2023 (optional link 5).

1.30 Developing this interconnection will increase electricity exchanges between Ecuador and Peru, because it will boost transfer capacity and operate synchronously. According to projections made for electricity exchange between the countries, it is estimated that in 2032 the transfer potential will be approximately 3,891 GWh, of which 95% will flow in the Ecuador-Peru direction and 5% in the reverse direction. In addition, with this new interconnection, the countries will arrange IETs that comply with the market rules set forth in D816 and its regulations, thus consolidating bilateral electricity transactions among Colombia, Ecuador, and Peru and fostering the establishment of a subregional electricity market within the framework of the Andean Short-Term Electricity Market (paragraph 1.8).

1.31 **Binational coordination for developing the project.** Under Ecuador and Peru's plans to formalize the execution of interconnection infrastructure, presidential and binational cabinet meetings are held annually, where the energy agenda has been key, confirming the political will to consolidate this project. In February 2022, the countries met in Tumbes and ratified their support for the regional interconnection program.

1.32 In order to move forward with the planning, construction, and operation of the new interconnection, since its creation in 2014 the Binational Technical Working Group has brought together representatives from the electricity sector of both countries who periodically coordinate studies and activities and jointly monitor the milestones for fulfillment of the binational commitments. The Tumbes Action Plan guides the actions through which the Governments of Ecuador and Peru undertake to monitor

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[35] Based on binational studies, it is not advisable to exceed a transmission capacity of 1,000 MW while operating with a single circuit, since this would generate stability problems and the risk of massive failures in the electricity systems. In the future, when demand so permits and beyond the scope of this operation, the second circuit will be installed, thus making it possible to approach the use of the 1,732 MVA of the first circuit's nameplate capacity, plus the additional capacity of the second circuit.

[36] CELEC EP is the beneficiary of loan 4845/OC-EC, which includes studies to optimize the company's operations.

binational issues and includes the commitment to update the joint schedule for project execution until the start of commercial operations.

1.33 **Innovation and digitization.** Implementation of digital tools can help to improve the administration and supervision of infrastructure projects and boost digitalization in the region.[37] In transmission works, the superimposition of digital imagery on georeferenced maps coupled with the use of drones makes it possible to simplify[38] the management of schedules, technical data, and budgetary data within a digital platform that shows the progress of works, improves the flow of information, and facilitates the identification of problems over the project's life cycle. This provides access through mobile devices to up-to-date information on progress in general, which facilitates the identification of problems to establish action plans to resolve them. In addition, this allows information to be shared with stakeholders, including executive and operational levels, and civil society, helping to increase public awareness of the project. During the construction phase of this project, Transelectric will implement an innovation and digitalization program for remote supervision of works.

1.34 **Gaps regarding gender, diversity, and persons with disabilities in the transmission segment in Ecuador.** According to the National Statistics and Census Institute, in Ecuador there are 816,156 persons with disabilities. Moreover, women represent only 28% of employees in the electricity, gas, and water sectors,[39] which illustrates their low participation in high-productivity sectors. Transelectric, the business unit in charge of energy transmission and operating the National Transmission System (NTS), has 789 employees, and only 6 of these are persons with disabilities.[40] Of its total workforce, 16% are women and 84% are men. The imbalance in gender equity is even more evident in chiefly technical areas of work,[41] where women represent only 5% of total employees. This gap is less pronounced in the areas that provide services for administrative and advisory processes[42] (45% women vs. 55% men).

1.35 **Country strategy for the sector.** Ecuador's Electricity Master Plan 2018-2027 prioritizes investments to guarantee supply through the development of local energy resources, prioritizing the share of renewable energy. The expansion of the NTS considers the investments necessary to guarantee adequate levels of reliability, safety, and service quality, including the construction of the 500 kV interconnection between Ecuador and Peru, especially to increase electricity exchanges. Also, as part of the SINEA initiative, this interconnection is the first project within the framework of the roadmap (paragraph 1.10). In the 2017 Trujillo Presidential Declaration, the presidents of Ecuador and Peru committed to

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37 Supervision of works in the electricity sector can benefit from innovation and digitalization programs to automate processes.

38 Serebrisky et al., 2017. Digital tools contribute to better investment and administration of infrastructure projects and to increased productivity in the construction of works.

39 IDB, 2014. Labor Market and Social Security Information System.

40 According to the International Labour Organization, disability can be a cause of poverty because of the limited skills development and employment opportunities provided to persons with disabilities.

41 Referred to in Ecuadorian labor legislation as value-adding or substantive processes.

42 Human talent, goods, purchasing, finance, occupational health and safety, communication and legal, among others.

maintaining close coordination in order to define the actions and requirements necessary to implement the 500 kV transmission infrastructure between the two countries.

1.36 **The Bank's sector knowledge and lessons learned** The IDB has played a key role as coordinator of regional initiatives such as SIEPAC, SINEA, Sistema de Integración Energética del Sur [Southern Energy Integration System], and Arco Norte, where it has provided financial support and technical leadership. The Bank was the main driver of the binational electricity interconnection projects that began to crystallize in the 1970s and has been leading initiatives such as SIEPAC since the 1990s. Leveraging the experience, lessons learned, and good practices gained by the IDB in developing SIEPAC, in 2011 the Bank became the Technical Secretariat of SINEA, which has led to significant progress being made in regulatory and operational harmonization among the participating countries. Several feasibility studies have also been conducted for interconnections between member countries.

1.37 Over the past decade the Bank has supported the Ecuadorian electricity sector by approving 10 investment loans and 2 policy-based loans totaling US$1.818 billion. The portfolio currently in execution consists of five investment loans to support the sector and has contributed to improving the electricity sector in Ecuador in general and, in particular, of integration issues, including notably: (i) loan 3167/OC-EC, which financed the preliminary draft and socioenvironmental studies of the Ecuador–Peru 500 kV interconnection; and (ii) loan 4343/OC-EC, which finances reinforcements in the NTS to improve the conditions of the transmission system to optimize Ecuador's international interconnections. The Bank has also developed knowledge products on the decarbonization of electricity systems, both regionally and in Ecuador and Peru.[43] This operation represents a milestone of central importance within the strategy developed by the IDB to realize exchanges and transfers of electricity from Mexico to the Southern Cone countries.

1.38 The operation design incorporates the lessons learned and best practices from the IDB's support of the SIEPAC and SINEA regional initiatives.[44] In this connection, it is important to highlight the importance of: (i) the political will and support to deepen energy integration, strengthening the institutions leading the development of the process and promoting coordination among them; and (ii) a harmonized regulatory framework on the basis of which the market is put into operation, as well as a common understanding of it by the participating institutions and agents. The political will of the SINEA member countries has been translated into electricity integration agreements and the declarations of its Council of Ministers and of the binational delegations of the initiative's member countries, resulting in the D816 and its regulations.

1.39 **IDB Group Country Strategy with Ecuador 2022-2025.** The program is aligned with the IDB Group Country Strategy with Ecuador 2022-2025

[43] In Ecuador, the IDB worked with Escuela Politécnica Nacional as part of the *Deep Decarbonization Pathways for Latin America and the Caribbean* project ATN/MC-16271-RG. In Peru, the IDB worked with Universidad de Costa Rica and Universidad del Pacífico, ATN/FR-18228-RG. See footnotes 2 and 32.

[44] Estudios de Armonización Regulatoria y Planificación de la Infraestructura para la Región Andina (IDB, 2015); Central American Electricity Integration (IDB, 2017); La Red del Futuro (IDB, 2017); Interconexión SINEA-Cono Sur – Sistemas Existentes y Beneficios Potenciales (2017).

(document GN-3103-1) by contributing to Priority Area I: Development of the productive sector as a driver of sustainable growth, promoting energy security and electricity supply at competitive prices and fostering access to export markets, and by strengthening Ecuador's electricity integration with Peru and eventually with the Andean region. It also contributes to Priority Area III: Strengthening of social progress, with emphasis on gender, by improving the management and quality of social services, by expanding electricity infrastructure to strengthen the electricity system, which is essential for development, particularly of the most vulnerable groups and sectors. The project is included in Annex III of the 2022 Operational Program Report (document GN-3087).

1.40 **Strategic alignment.** The program is consistent with the Update to the Institutional Strategy 2020-2023 (document AB-3190-2) and aligns with the following development challenges: (i) productivity and innovation, by strengthening the electricity supply in conditions that promote competitiveness, since the existence of an interconnection project with Peru will improve the reliability of electricity transfers between the countries, and by promoting greater use of digital technologies in the supervision of electricity infrastructure works; and (ii) economic integration, by supporting the development of infrastructure that will increase regional electricity exchanges, facilitating growth in regional energy transactions. The project is also aligned with the crosscutting areas of: (i) climate change and environmental sustainability, by enabling an increase in generation using renewable energy sources; and (ii) gender equality and diversity, by including concrete actions to integrate more women into technical areas and persons with disabilities into the administrative area and thus close gaps at the company. The program contributes to the Corporate Results Framework 2020-2023 (document GN-2727-12) by using indicators on climate change and environmental sustainability, through the country development outcome indicator "Value of investments in resilient and low-carbon infrastructure" and indicators relating to economic integration: "Integration agreements and cooperation initiatives at the regional level supported" and "International trade volume supported". In all, 91.9% of the operation's resources are invested in climate change mitigation activities, according to the joint methodology of the multilateral development banks for tracking climate finance. These resources contribute to the IDB's climate finance target of 30% of the volume of approvals annually.

1.41 The program is aligned with the Energy Sector Framework Document (document GN-2830-8) since it promotes the sustainability of the energy matrix through the use of renewable energy and is consistent with the priority areas of the Sustainable Infrastructure Strategy for Competitiveness and Inclusive Growth (document GN-2710-5), through: (i) support for the construction and maintenance of socially and environmentally sustainable infrastructure; and (ii) ongoing improvements in sector governance through increased efficiency in the provision of infrastructure services, by financing the expansion and strengthening of the NTS to help meet projected demand and improve the Andean region's energy exchanges. The program is consistent with the Climate Change Sector Framework Document (document GN-2835-8) since it promotes infrastructure to exploit the complementary use of renewable energy systems. It is consistent with the Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (document GN-2609-1) since it develops

infrastructure aimed at making better use of both countries' energy resources, by recognizing and seeking to mitigate the effects of climate change. The operation is aligned with the Gender and Diversity Sector Framework Document (document GN-2800-8) since it promotes gender equality and diversity for the empowerment of women and persons with disabilities, and the Gender Action Plan (document GN-2531-19).

1.42 **Gender and diversity actions in the operation.** Promoting gender equality in the institutional environment strengthens human capital and improves the quality of management processes.[45] As for persons with disabilities, the International Labour Organization (ILO) estimates that their exclusion from the labor market can cost countries 1% to 7% of GDP.[46] Taking advantage of the efforts of the MEM through the development of the Gender Equity Strategy for the Electricity Sector,[47] Transelectric will implement the first stage of the Gender and Diversity Action Plan for the transmission segment, which will support activities aimed at closing existing gaps, with an emphasis on the operational and administrative area, including: (i) training programs in technical areas for women in partnership with State training institutes, thereby seeking to increase the number of potential candidates for technical jobs; (ii) internships for women pursuing technical careers, to promote their interest in the energy sector and encourage them to consider it as a professional avenue; (iii) communication campaign to integrate more women into Transelectric's technical areas; and (iv) strategy and definition of actions for the inclusion of persons with disabilities at the company, which will provide Transelectric with a guide to create incentives, policies, procedures, and adequate infrastructure to hire persons with disabilities as part of its workforce.

1.43 **Effects on local employment.** During construction of the project, a positive impact is expected in terms of job creation. This effect has been demonstrated by experiences in infrastructure projects[48] where examination of the 500 kV transmission systems built in Ecuador reveals that the percentage of local content, including goods, services, and labor, has been approximately 30%. Local employment opportunities are foreseen in skilled and unskilled labor during the construction stage of the civil works, in addition to the assembly of equipment, the laying of conductors, and the provision of locally manufactured materials and equipment.

1.44 **Public Utilities Policy.** An analysis of compliance with the Public Utilities Policy (document GN-2716-6) was conducted. The program meets the conditions of: (i) financial sustainability, based on: (a) the sustained reduction in generation costs; (b) modernization of operating systems; and (c) incorporation of the operation and maintenance costs of the projects included in the program in the

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45 Boston Consulting Group, 2018. Women in Energy.

46 ILO, 2022. *Disability*.

47 Funded under loan 4343/OC-EC, it will include the development of a Gender and Diversity Action Plan to be executed in stages, with different activities and programs in the distribution and transmission segments and in the administrative and managerial areas of the electricity sector's governing body. In addition, it will include actions necessary to guide companies in the sector to make the necessary adaptations to ensure that persons with disabilities receive the same level, quality, and share of employment opportunities.

48 Pastor et al., 2020. El potencial de la inversión de infraestructura para impulsar el empleo en América Latina y el Caribe.

budget of the companies in charge of their operation; and (ii) economic evaluation, since the project to be financed holds up to a rigorous analysis of economic-financial and technical feasibility.

B. Objectives, components, and cost

1.45 **Objective.** The general objective of the program is to strengthen regional energy integration, promoting the sustainable development of the electricity sector. The specific objectives are to: (i) strengthen the electricity interconnection between Ecuador and Peru; and (ii) increase electricity transactions between Ecuador and Peru. The proposed components are:

1.46 **Component I: Regional electricity infrastructure (US$251.84 million).** The works to be financed consist of:

(i) expansion of the Chorrillos substation, the starting point of the new interconnection system, which includes: (a) the installation of 500 kV line and reactor bays, as well as main and backup protections, plus automation and control systems; and (b) civil works, comprising foundations for the bay gantries, the equipment and insulator supports, and the reactor bases.

(ii) construction of the new Pasaje substation, which, in addition to contributing to the interconnection, will reinforce Ecuador's 230 kV transmission system, which includes: (a) transformers, reactors, protections, and automation and control systems; (b) transformer, line, and reactor bays prepared for two circuits; (c) civil works, including embankment, drainage, site development, control building, shelters, and all the necessary foundations for the assembly of gantries and electricity and protection equipment; and (d) sectioning of two sections of 230 kV transmission line of approximately 0.7 km and 0.9 km between the Pasaje substation and the NTS.

(iii) construction of the transmission line between the Chorrillos substation and the Pasaje substation, measuring approximately 205 km with metallic structures prepared for a double circuit, with the initial assembly for one circuit with an ACAR-750 conductor with a nameplate capacity of 1,500 MVA at 500 kV, 60-meter easement strip, insulators, and guard wires.

(iv) construction of the transmission line between the Pasaje substation and the border with Peru, measuring approximately 74.8 km with metallic structures prepared for a double circuit, with the initial assembly for one circuit with an ACAR-800 cable with a nameplate capacity of 1,500 MVA at 500 kV, 60-meter easement strip, insulators, and guard wires.

1.47 **Component II: Institution-strengthening, digitalization, studies, and compliance with socioenvironmental safeguards (US$6.78 million).** This component is divided into the following subcomponents:

1.48 **Subcomponent 2.1. Institution-strengthening (US$780,000).** Financing will be provided for the following activities: (i) program of studies for Ecuador's integration into the Regional Andean Electricity Market, including: studies and training

activities related to Transelectric's commitments, for compliance with D816 regulations (paragraph 1.8); (ii) innovation and digitalization program in works supervision, which consists of the purchase of equipment, systems, and computer software for data acquisition, processing, storage, and distribution for remote management during the interconnection construction work (paragraph 1.33); and (iii) Gender and Diversity Action Plan in the transmission segment of the electricity sector (paragraph 1.42), which will include activities to both close the gender gap and improve the conditions of persons with disabilities on Transelectric's operations and administrative teams (paragraph 1.34).

1.49 **Subcomponent 2.2. Socioenvironmental management program (US$6 million).** This includes resources for compliance with the environmental and social management plans (ESMP) and the resettlement and asset restitution plan (RARP).

1.50 **Administration and monitoring (US$5 million).** Administrative expenses relating to the program management unit (PMU), program evaluations and audits, and the expenses associated with supervision of construction of the project will be financed. A contingency amount is also included.

C. Key results indicators

1.51 Program implementation is expected to increase the share of electricity transactions in the total trade flow between Ecuador and Peru and to increase the share of renewable energy, contributing to the sustainability of the electricity sector with a long-term outlook. In terms of outcomes, it is expected to contribute to: (i) strengthening the electricity interconnection between Ecuador and Peru, by increasing the number of transmission systems operating synchronously and increasing transmission capacity between the countries; and (ii) increasing electricity transactions between Ecuador and Peru, thereby increasing the amount of electricity traded between the countries. For further details, see Table 1.

Table 1. Impact and Outcome Indicators

Impact	Indicator
Increase in the importance of electricity transactions in the trade flow between Ecuador and Peru	Electricity exchange as a percentage of total trade between Ecuador and Peru
Greater share of renewable energy in Ecuador's electricity matrix to contribute to its sustainability	Percentage of Ecuador's electricity generation using renewable energy
Outcome	**Indicator**
Specific development objective 1: Strengthen the electricity interconnection between Ecuador and Peru	
Synchronous operation of the electricity interconnection between Ecuador and Peru in operation	Synchronous operation of electricity interconnections between Ecuador and Peru
Higher electricity transmission capacity available between Ecuador and Peru	Transmission capacity available between the two countries
Specific development objective 2: Increase electricity transactions between Ecuador and Peru	
Greater electricity exchanges between Ecuador and Peru	Electricity traded between the two countries

1.52 The project's main beneficiaries will be the users of both countries' electricity systems.

1.53 **Economic analysis.** The economic viability was analyzed for the works comprising the Ecuadorian section, including: (i) the expansion of the Chorrillos substation; (ii) the construction of the Pasaje substation; and (iii) the transmission lines between the Chorrillos substation and the border with Peru. Different scenarios were used for the analysis, including demand growth and the timing of the entry of new generation plants. The analysis, considering the costs and benefits for Ecuador, resulted in an economic internal rate of return of 33.2% and an economic net present value of US$271.3 million. In addition, a comprehensive analysis of the works, including the investments in Peru, was carried out considering the costs and benefits of both sections together, which resulted in an economic internal rate of return of 30.3% and an economic net present value of US$381 million. A sensitivity analysis which generated positive results was conducted by varying the study's main parameters, including, inter alia: (i) an increase in the cost of investments; (ii) a delay in the start of commercial operations; and (iii) slower growth in demand.

II. Financing Structure and Main Risks

A. Financing instruments

2.1 **Cost and financing.** The estimated cost of the program is US$263.62 million, of which US$125 million will be financed using the Bank's Ordinary Capital resources: US$125 million correspond to joint financing to be provided by the European Investment Bank (EIB)[49] and US$13.62 million to the local counterpart, to be provided by CELEC EP. The project is structured as a specific works investment loan, as detailed in paragraph 1.46, for which Transelectric is finalizing the final design in the fourth quarter of 2022.

Table 2. Estimated program costs (US$ million)

Components	IDB	EIB	Local	Total	%
Component I. Regional electricity infrastructure	113.22	125.00	13.62	251.84	95.53
Component II. Institution-strengthening, digitalization, studies, and compliance with socioenvironmental safeguards	6.78	0	0	6.78	2.57
Subcomponent 2.1. Institution-strengthening	0.78	0	0	0.78	0.29
Subcomponent 2.2. Socioenvironmental management program	6.0	0	0	6.00	2.28
Administration and monitoring	5.00	0	0	5.00	1.90
Total	**125.00**	**125.00**	**13.62**	**263.62**	**102.57**

2.2 **Disbursement period.** Resources will be disbursed by combining IDB and EIB financing over five years, following the disbursement schedule in Table 3. The disbursement timeline considers the experience and lessons learned from the transmission projects implemented in Ecuador.

[49] On 5 February 2021, the EIB received a request from the Ministry of Economy and Finance of Ecuador to complete financing of the project. Approval by the EIB board is expected in the first quarter of 2023. EIB resources are required to enable the program to achieve the proposed objectives.

Table 3. Projected disbursements (US$ thousand)

Source	Budget	2023	2024	2025	2026	2027
IDB (Ordinary Capital)	125,000	31,496	60,012	23,529	5,726	4,237
EIB	125,000	33,339	62,049	21,656	4,622	3,334
Total	**250,000**	**64,835**	**122,061**	**45,185**	**10,348**	**7,571**
%	**100**	**26**	**49**	**18**	**4**	**3**

B. Environmental and social safeguard risks

2.3 **Environmental and social considerations.** In accordance with the Bank's Environment and Safeguards Compliance Policy (operational policy OP-703),[50] this is classified as a category "A" operation, because it will cause negative environmental and social impacts typical of a high-voltage transmission line for which prevention, mitigation, and compensation measures that are feasible to implement will be developed. The main impacts and risks are associated with land acquisition for the new substations, the placement of easements, and impacts related to the right-of-way along the entire length of the transmission line, and the construction of towers. Land acquisition will lead to physical displacement, and the impact on livelihoods in rural areas due to the placement of easements that restrict use of agricultural land. It should be noted that the Chorrillos substation will be expanded within the property where it is currently located. Land will need to be purchased to build the Pasaje substation. Likewise, critical natural habitats were identified that could be affected by the project. Accordingly, requirements were set for project design, construction, and operation, in keeping with prioritization of the habitats. Variations on the layout have been established, to avoid three areas with high-priority critical natural habitats. No indigenous communities have been identified in the project area. In the census conducted for the RARP in 2021, some cases (7) of physical displacement of dwellings have been identified. Subsequently, in 2021 and 2022 some variants in the final layout of the transmission line were included to: (i) respect agreements with banana and sugar growers to reduce impacts on the croplands; (ii) respond to problems related to geology and stability of the tower sites; and (iii) avoid or minimize impacts on critical natural habitats. The contractual conditions call for updates to the ESIA/ESMP and RARP (including new rounds of consultation), based on the final layout.

2.4 The first round of significant consultations took place between 14 and 18 December 2020 and the second round between 3 and 9 March 2021. They consisted of a combination of virtual (6 in each round) and in-person sessions (15 in the first round and 23 in the second). The in-person sessions provided a venue where people could attend and connect to the virtual sessions, complying with national biosafety protocols. There were 210 participants in the first session and 270 in the second one between virtual and in-person participation. Participants' main concerns related to: (i) compensation for the imposition of the easement for the transmission line; (ii) engagement during the preparation of the RARP; (iii) expectations for local hiring; and (iv) access to mechanisms to channel possible claims. Thirteen in-person meetings on the RARP were held between

[50] This operation became eligible prior to the entry into force of the Bank's new Environmental and Social Policy Framework.

15 and 20 March as part of the second round of consultations in which 228 stakeholders participated. The ESIA and ESMP and a complementary study on critical natural habitats for the transmission line and Pasaje substation, the environmental and social analysis (ESA), the ESMP for the expansion of the Chorrillos substation, and the RARP are available. The final versions of all documents (ESIA/ESMP, ESA/ESMP, and RARP) and the three consultation reports were published in accordance with Bank policies.

C. Fiduciary risks

2.5 The IDB applied the Institutional Capacity Assessment Platform (ICAP) in January 2021 and confirmed that CELEC has the capacity and a satisfactory degree of development to execute the project. No financial management or procurement risks were identified.

D. Other risks and key issues

2.6 The following risks were identified during the project preparation stage:

(i) High risks consist of: (i) planning: delay in signing the loan contract, the sovereign guarantee contract, and the cofinancing to be provided by EIB. This will be mitigated by providing support to the teams in following up on the procedures, especially for signing the loan and sovereign guarantee contracts and the inclusion of a condition precedent to the first disbursement; (ii) organizational structure: information gaps due to possible internal staff turnover, which will be mitigated with activities to explain and publicize project content, progress, and plans to the authorities and areas of the company involved in execution; and (iii) planning: possible noncompliance with and delays in the management of the Bank's environmental and social safeguards, which includes, as mitigation measures, the Bank's support in ongoing follow-up and monitoring to ensure compliance with Bank policies and the inclusion of a social specialist and an environmental specialist in the PMU.

(ii) The following have been identified as medium-high risks: (i) political: possible change in energy integration policy and positions of the Governments of Ecuador and Peru; to mitigate this risk, the project content, progress, and plans will be explained and publicized to all related institutions, including reports during the meetings of the binational technical committee and the committee of SINEA ministers and deputy ministers; and (ii) organizational structure: insufficient human resources for the formation of the PMU at Transelectric. As a mitigation measure, current internal staff will be identified at the executing agency that can support project management, in addition loan resources will be allocated to hire the PMU's experts.

2.7 The medium- and long-term sustainability of the investments is guaranteed, from a resilience standpoint, with the inclusion of technical specifications that allow for the incorporation of resilient infrastructure and, in financial terms, with the remuneration for transmission charges that the borrower will receive based on the regulations in force for transmission line projects, and the operating and

maintenance costs will be included in Transelectric's annual budget. In addition, the executing agency must submit the annual maintenance plan to the Bank.

2.8 Regarding the sustainability of the project impacts relating to renewable energy, the continuity of energy flows using renewable energy from Ecuador to Peru is envisaged. However, conversely, although the exchanges are due to available generation surpluses, the greater transmission capacity between the two countries could affect the growth of generation capacity with renewable energy in Peru in the long term. Taking into account the GEPs of the countries (paragraph 1.23), which calls for growth in generation using renewable energy sources, the IDB will reinforce the continuity of renewable energy development in its policy dialogue with both countries.

2.9 During preparation of this operation, the Government of Peru moved forward with bidding the Peruvian section. For this, given Peru's experience developing electricity transmission projects with private participation, the risks associated with delays in progress on the interconnection works have been mitigated, considering the current status of the process (paragraph 1.29).

III. Implementation and Management Plan

A. Summary of implementation arrangements

3.1 **Borrower, guarantor, and executing agency.** The borrower will be CELEC EP, with Transelectric serving as executing agency. The guarantor of this operation will be the Republic of Ecuador.

3.2 **Execution structure.** The executing agency will be responsible for: (i) bidding, procurement, execution administration, and works supervision; (ii) commissioning studies and strengthening institutions and socioenvironmental feasibility; and (iii) management, follow-up, and monitoring, for which a PMU coordinated by Transelectric will be set up and which can be financed using loan proceeds, following the same system implemented in earlier operations, in order to leverage the executing agency's experience with the Bank's policies and procedures.

3.3 **Contractual conditions precedent to the first disbursement of the loan: The borrower will provide evidence to the Bank that: (i) the program operating manual (optional link 4) has been approved and entered into force under the terms previously agreed with the Bank. This should include, inter alia, the environmental and social requirements and incorporate as an annex the ESMP for the transmission line and the construction of the Pasaje substation, the ESMP for the expansion of the Chorrillos substation, and the RARP.** This condition is included to establish the structure, guidelines and procedures to be followed by the executing agency for efficient implementation of the operation; **(ii) the PMU has been created and its minimum necessary key staff, including a general coordinator, a procurement specialist, a financial specialist, a monitoring and evaluation specialist, a social specialist, and an environmental specialist, has been appointed and/or hired**. This condition is necessary to get an early start on proper management of the loan, which will lead to successful execution of the project; and **(iii) the joint financing contract with the EIB has been signed**. Since the operation is jointly financed, this condition is included and will complement program execution.

3.4 **Special contractual conditions of execution.** The conditions are: (i) prior to launching bidding under Component I, the borrower will have the documentation necessary to initiate the funds certification process for such processes. This condition is included because the works under this component are financed jointly by the two sources of financing; (ii) prior to using the resources of each output included in Subcomponent 2.1, the borrower will submit the investment plan and execution schedule to the Bank for its no objection, identifying the final scope of the activities to be conducted. This condition is included because the programs under Subcomponent 2.1 are currently being prepared by the executing agency and will be finalized once the D816 regulations are in place; and (iii) see the environmental and social special contractual conditions for execution in Annex B of the environmental and social management report (required link 3).

3.5 **Procurement.** Procurements financed in full or in part by Bank resources will be carried out in accordance with the Policies for the Procurement of Goods and Works Financed by the IDB (document GN-2349-15) and the Policies for the Selection and Contracting of Consultants Financed by the IDB (document GN-2350-15) that are in effect at the time of execution and in any case when the borrower agrees to their use in writing. There are also plans for the IDB and EIB to sign a specific project agreement in light of the mutual reliance agreement for procurement they signed in April 2022 that will cover aspects related to procurement management.

3.6 **Exceptions to Bank policy.** The project team is requesting the following partial waivers: (i) to the Operational Policy on Guarantees Required of the Borrower (OP-303) regarding the Republic of Ecuador providing a guarantee for the counterpart obligations and positive covenants. The partial exception linked to ensuring the timely provision of the local contribution is justified and backed by the financial and legal soundness of CELEC-EP, as demonstrated in recent fiscal years and to the robustness of its projected financial situation. In accordance with the Planning and Public Finances Code (CPFP), CELEC-EP, as a State-owned company and the borrower, is responsible for executing the projects financed with these resources and enjoys legal stability that provides for long-term legal certainty in the company's operations. Moreover, it has administrative, financial, economic, and managerial autonomy, as per the Constitution of the Republic and the Organic Law on State-owned Companies. In addition, in accordance with the CPFP, the central government will provide the sovereign guarantee on behalf of government agencies and entities, once fulfillment of the legal requirements has been verified; and (ii) to the provisions of the Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank (document GN-2349-15), given the EIB's participation cofinancing this operation, and since the Bank's procurement policies will be applied in all procurement processes, whenever the Bank assumes a leadership position in supporting execution and monitoring the procurement activities planned in the program, in order to allow suppliers, contractors, and goods from countries that are not members of the Bank to

participate in procurement processes cofinanced with EIB resources under the mutual reliance agreement for procurement signed with the EIB in April 2022.[51]

3.7 **Disbursements and advances of funds.** Disbursements will be made in the form of advances of funds based the project's liquidity needs derived from the annual work plan and procurement plan. Cash requirements will be programmed over a rolling 12-month horizon, and advances will cover liquidity needs for up to 6 months, which includes CELEC EP's expected reporting time. At the borrower's request, direct payments to suppliers or reimbursement of expenditures may also be made.

3.8 **Retroactive financing.** Using the loan proceeds, the Bank may retroactively finance up to US$6.25 million (5% of the proposed loan amount) and recognize up to US$681,000 (5% of the amount of the local contribution) from the local contribution such possible advances for eligible expenditure as may be incurred by the borrower prior to the loan's approval date, such as advances on Component I works, Component II studies, and administrative expenses to set up the PMU, provided that requirements substantially similar to those established in the loan contract have been met. Such expenditures will have been incurred on or after 15 January 2020 (the project profile approval date), but under no circumstances may include expenditures incurred more than 18 months prior to the loan approval date.

3.9 **Audits.** Project financial statements will be requested on an annual basis. The external audit of the project will be conducted by a firm of external auditors acceptable to the IDB, which may be contracted using loan proceeds and based on terms of reference agreed between the IDB and the executing agency.

B. Summary of arrangements for monitoring results

3.10 **Monitoring arrangements.** The project will be monitored following the indicators and targets set in the Results Matrix and in the monitoring and evaluation plan.

3.11 The Bank will conduct semiannual technical visits to the executing agency to review the progress of works and make any adjustments arising from its execution. Fiduciary supervision visits will be made every year. Semiannual execution progress reports will be sent to the Bank, which will include the monitoring and progress report (see required link 2).

3.12 **Arrangements for program evaluation.** Program evaluation includes a midterm and a final evaluation financed with loan proceeds. The midterm evaluation will be commissioned by the executing agency within 30 months of the entry into force of the loan contract. The final evaluation will be commissioned by the executing agency when requesting the last disbursement of loan funds. The final evaluation will determine the level of fulfillment of the targets set in the Results Matrix, will include an ex post cost-benefit analysis, and will be submitted before the financial

[51] *"Procedural Framework between the European Investment Bank and the Inter-American Development Bank in respect of mutual reliance in procurement for jointly co-financed public sector projects in common countries of operations"* of April 2022 (EIB-IDB Agreement). As stipulated in paragraph 5.1 of the EIB-IDB Agreement, projects to be cofinanced by EIB and the IDB will not be subject to eligibility restrictions based on the country of origin of the tenderer/bidder or the goods to be procured, subject to authorization of this by the Board of Executive Directors of the Bank when approving each operation.

close of the operation. The terms of reference for both evaluations must have the Bank’s no objection.

Development Effectiveness Matrix		
Summary	RG-L1140	
I. Corporate and Country Priorities		
Section 1. IDB Group Strategic Priorities and CRF Indicators		
Development Challenges & Cross-cutting Issues	-Productivity and Innovation -Economic Integration -Gender Equality and Diversity -Climate Change	
CRF Level 2 Indicators: IDB Group Contributions to Development Results	-Amount of international trade supported ($) -Regional integration agreements and cooperation initiatives supported (#)	
2. Country Development Objectives		
Country Strategy Results Matrix	GN-3103	(i) Expand coverage and quality of physical and technological infrastructure; (ii) Reduce job insecurity; and (iii) Improve access and coverage to social and basic services.
Country Program Results Matrix	GN-3087	The intervention is included in the 2022 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		Evaluable
3. Evidence-based Assessment & Solution		10.0
3.1 Program Diagnosis		2.5
3.2 Proposed Interventions or Solutions		3.5
3.3 Results Matrix Quality		4.0
4. Ex ante Economic Analysis		10.0
4.1 Program has an ERR/NPV, or key outcomes identified for CEA		1.5
4.2 Identified and Quantified Benefits and Costs		3.0
4.3 Reasonable Assumptions		2.5
4.4 Sensitivity Analysis		2.0
4.5 Consistency with results matrix		1.0
5. Monitoring and Evaluation		8.8
5.1 Monitoring Mechanisms		4.0
5.2 Evaluation Plan		4.8
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood		Medium Low
Environmental & social risk classification		A
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Treasury, Accounting and Reporting. Procurement: Information System.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	Se aprobó la CT EC-T1438, para financiar actividades que permitieran realizar los análisis económico y socioambiental del proyecto.

The general objective is to strengthen regional energy integration. The specific objectives are: (i) to strengthen the electrical interconnection between Ecuador and Peru; and (ii) increase electricity transactions between Ecuador and Peru.

The project's vertical logic and results matrix are sound. Interventions are consistent with the diagnosis and expected outcomes.

The result of the analysis, considering the costs and benefits for Ecuador, resulted in an Internal Rate of Economic Return (EIRR) of 33.2% and a Net Economic Present Value (VANE) of US$271,300,000. In addition, a comprehensive analysis of the works including the investments in Peru, considering the costs and benefits of both sections jointly, results in an EIRR of 30.3% and a VANE of US$381,000,000. An sensitivity analysis was performed, which generated positive results, varying the main study parameters, among others: (i) increase in the cost of investments; (ii) delay in the start of commercial operations; and (iii) lower growth of the demand

The evaluation plan proposes to carry out an ex-post cost-benefit analysis that is well presented and developed.

RESULTS MATRIX

Project objective	The general objective of the program is to strengthen regional energy integration, promoting the sustainable development of the electricity sector. The specific objectives are to: (i) strengthen the electricity interconnection between Ecuador and Peru; and (ii) increase electricity transactions between Ecuador and Peru.

GENERAL DEVELOPMENT OBJECTIVE

Indicators	Unit of measurement	Baseline value	Baseline year	Expected year achieved	Target	Means of verification	Comments
General development objective: Strengthen regional energy integration, promoting the sustainable development of the electricity sector.							
Electricity exchange as a percentage of total trade between Ecuador and Peru	%	0.07	Average 2015-2019	2027	2.96	Final evaluation report, based on data from the Central Bank of Ecuador and the Regulation and Control Agency	The proposed target considers 2027 as the project's first full year of operation.
Percentage of Ecuador's electricity generation using renewable energy	%	90	2019	2027	99	Report from the national electricity operator (CENACE).	

SPECIFIC DEVELOPMENT OBJECTIVES

Indicators	Unit of measurement	Baseline value	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	End of project	Means of verification	Comments
Specific development objective 1: Strengthen the electricity interconnection between Ecuador and Peru											For the targets, 2027 is considered as the project's first full year of operation. See methodology in monitoring and evaluation plan.
Synchronous operation of electricity interconnections between Ecuador and Peru	# interconnections	0	2021	0	0	0	0	1	1	CENACE report on international operations	
Transmission capacity available between the two countries	MW	80	2021	80	80	80	80	680	680		
Specific development objective 2: Increase electricity transactions between Ecuador and Peru											
Electricity traded between the two countries	GWh/year	60.67	2019	60.67	60.67	60.67	60.67	2,726	2,726	CENACE report on international operations	

OUTPUTS

Indicators	Unit of measurement	Baseline value	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	End of project	Means of verification	Comments
Component I. Regional electricity infrastructure											
1.1. Chorrillos substation expansion, 500 kV yard built and delivered	Unit	0	2021	0	0	0	0	1	1	Project progress report	
Construction progress on the 500 kV yard	%	0	2021	0	35	40	25	0	100		
Progress in the manufacture and installation of the equipment	%	0	2021	0	35	60	0	5	100		
1.2. 500-kV Chorrillos–Pasaje transmission line built and delivered	Unit	0	2021	0	0	0	0	1	1		
Kilometers of line built	km	0	2021	0	0	65	140	0	205		
1.3. Pasaje substation, 500 kV/230kV	Unit	0	2021	0	0	0	0	1	1		
Progress in the construction of the Pasaje substation	%	0	2021	0	35	45	20	0	100		
Progress in the manufacture and installation of the equipment	%	0	2021	0	35	60	0	5	100		
Kilometers of 230 kV Minas San Francisco–San Idelfonso sectioning line built	km	0	2021	0	0	0	1.55	0	1.55		
1.4 500kV Pasaje – Frontera transmission line built and delivered	Unit	0	2021	0	0	0	0	1	1		
Kilometers of line built	km	0	2021	0	0	25	49.8	0	74.8		
Component II. Institution-strengthening, digitalization, studies, and compliance with socioenvironmental safeguards											
Subcomponent 2.1. Institution-strengthening											
2.1.1 Program of studies for Ecuador's integration into the regional electricity market.	# programs	0	2021	0	0	0	1	0	1	Project progress report	
2.1.2 Works supervision innovation and digitalization program	# programs	0	2021	0	0	0	1	0	1		
2.1.3 Gender and diversity action plan for transmission implemented	# plans	0	2021	0	0	0	0	1	1		

Indicators	Unit of measurement	Baseline value	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	End of project	Means of verification	Comments
Technical training program for women in the transmission sector implemented	# events	0	2021	0	0	2	1	1	4		
Communication strategy to promote women's participation in the company implemented	# strategies	0	2021	0	0	1	0	0	1		
Internship program for women pursuing technical careers implemented	# programs	0	2021	0	0	1	0	0	1		
Strategy for the inclusion of persons with disabilities implemented	# strategies	0	2021	0	0	1	0	0	1		
Subcomponent 2.2. Socioenvironmental management program											
2.2.1. ESMP and RARP	# plans	0	2021	0	0	0	1	0	1	Project progress report	

Country: RG **Division**: ENE **Operation number:** RG-L1140 **Year**: 2022

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Executing agency: Empresa Pública Estratégica Corporación Eléctrica del Ecuador [Electricity Corporation of Ecuador, Strategic Public Company] (CELEC EP)

Operation name: Ecuador – Peru 500-Kilovolt Electricity Interconnection, Ecuadorian Section

I. FIDUCIARY CONTEXT OF THE EXECUTING AGENCY

1. Use of country system in the operation[1]

☒ Budget	☒ Reports	☒ Information system	☐ National competitive bidding
☒ Treasury	☐ Internal audit	☐ Shopping	☐ Other
☒ Accounting	☐ External control	☐ Individual consultants	☐ Other

2. Fiduciary execution mechanism

☒	Cofinancing	The operation will have cofinancing from the European Investment Bank (EIB) for up to US$125 million, under the joint cofinancing modality. All EIB-financed works will be cofinanced by the IDB. It will be implemented under the EIB-IDB mutual reliance agreement for procurement. The IDB is the lead financier to whom procurement preparation, implementation, and monitoring tasks will be delegated.
☒	Specific features of fiduciary execution	The borrower in this operation will be CELEC EP, which is a strategic public company created by executive decree in 2010; CELEC EP's governing body is the Ministry of Energy and Mines. CELEC EP has 14 electricity generation business units and 1 transmission business unit. Transelectric is the transmission business unit and will be the executing agency for this loan.

3. Fiduciary capacity

The executing agency's fiduciary capacity	The assessment of the executing agency's fiduciary capacity found the risk to be medium-low.

[1] Any system or subsystem that is subsequently approved may be applicable to the operation, in accordance with the terms of the Bank's validation.

4. Fiduciary risks and risk response

Risk taxonomy	Risk	Risk level	Risk response
Internal processes	Fiduciary functions improperly delegated, affecting the management plans and timeframes	Medium-low	Include the detailed delegation of fiduciary functions in the program Operating Regulations.
Human resources	High turnover of staff in fiduciary areas and little familiarity with IDB processes	Medium-low	Hiring fiduciary specialists with program resources.
Economic-financial	If the budget allocation is not sufficient over the life of the program, including coverage of the EIB contributions in the event those don't materialize, project execution could be delayed, leading to underexecution of resources	Medium-low	This risk will be mitigated by verifying the approval status of the EIB cofinancing during the kick-off workshop and evaluating the need to adjust the results matrix during that event, to ensure consistency between available resources and fulfillment of program objectives, and the comprehensive planning of program activities, to identify annual resources needs, adopting a strategy of active acceptance of projects in keeping with outcome targets, managing the budget allocation in a timely manner with the corresponding entities. If budget modifications or increases are identified during execution each year, the appropriate steps will be taken in a timely manner.

5. Policies and guidelines applicable to the operation: Documents GN-2349-15, GN-2350-15, OP-272-3, and OP-273-12.

6. Exceptions to fiduciary management policies and guidelines: A partial waiver is requested to the provisions of the Policies for the Procurement of Goods and Works Financed by the IDB (document GN-2349-15), in order to allow suppliers, contractors, and goods originating from countries that are not members of the Bank to participate in selection and procurement processes cofinanced with EIB resources.

II. CONSIDERATIONS FOR THE SPECIAL PROVISIONS OF THE LOAN CONTRACT

Special conditions precedent to the first disbursement:
Exchange rate: For the purposes of Article 4.10 of the General Conditions, the parties agree that the applicable exchange rate will be that indicated in Article 4.10 (b)(ii). For the purposes of determining the equivalence of expenses incurred in local currency from the local contribution or the reimbursement of expenditures from the loan, the agreed exchange rate will be the rate on the date the borrower, executing agency, or any other individual or legal entity to whom expenditure authority has been delegated makes the respective payments to the contractor, supplier, or beneficiary.

Type of audit: Audited special-purpose annual program financial statements will be required within 120 days of the close of each fiscal year (December 31) or the date of the last disbursement. The audit will be contracted no later than 120 days prior to the close of the term or the date of the last disbursement. CELEC EP will contract the external audit.

III. AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION

☒	Bidding documents	For the procurement of works, goods, and nonconsulting services executed in accordance with the procurement policies (document GN-2349-15), subject to international competitive bidding, the Bank's standard bidding documents or those agreed between the executing agency and the Bank for the procurement in question will be used. Also, consulting services will be selected and contracted in accordance with the policies for the selection and contracting of consultants (document GN-2350-15), and the standard request for proposals issued by the Bank or agreed between the executing agency and the Bank for the selection in question will be used. Pursuant to the cofinancing rules with the EIB, the bidding documents will include the environmental and social requirements of both banks and the integrity pledge. The project's sector specialist is responsible for reviewing the technical specifications and terms of reference for procurement during preparation of the selection processes and will be carried out when appropriate, in coordination with the EIB technical team.
☒	Advance procurement/retroactive financing:	Using the loan proceeds, the Bank may retroactively finance for up to US$6.25 million (5% of the proposed loan amount) and recognize for up to US$681,000 (5% of the local contribution amount) from the local contribution such possible advances in eligible expenditure as may be incurred by the borrower prior to the loan's approval date, such as advances on works under Component I, studies under Component II, and administrative expenses to set up the PMU, provided that requirements substantially similar to those established in the loan contract have been met. Such expenditures will have been incurred on or after 15 January 2020 (the project profile approval date), but under no circumstances may include expenditures incurred more than 18 months prior to the loan approval date. (See document GN-2349-15, document GN-2350-15 and the policy on recognition of expenditures, retroactive financing, and advance procurement (document GN-2259-1).)
☒	Special procurement provisions applicable to the operation	In implementing procurements cofinanced jointly with the EIB: - The IDB's policies will apply (documents GN-2349-15, GN-2350-15); the IDB will be lead cofinancing agency. The applicable thresholds for international competitive bidding or the selection of consulting firms will be €5 million for works and €200,000 for goods and services (consulting and nonconsulting) or the equivalent. The general notice and specific notices for procurements will be published in a national newspaper or official gazette, UNDB online, the

<table>
<tr><td></td><td></td><td>Official Journal of the European Union, and the IDB website. The awarding of contracts will be published, at a minimum, on UNDB Online, in the OJEU, and on the IDB's website.
Pursuant to EIB's Anti-Fraud Policy and the IDB's Policy on Prohibited Practices, all selection or bidding documents will include an Integrity Pledge. If a bidder issues a positive assurance in that pledge, the banks will agree on the steps to take in accordance with their own policies and procedures, including issuing an opinion on financing the contract or ineligibility of the bidding firm.
- All protests will be processed collaboratively between the banks, and the IDB will spearhead their processing. If the EIB were to receive a protest, it will send it to the IDB for review and a final decision.
- The mutual reliance agreements between the IDB and EIB on information sharing on investigations related to prohibited practices or conduct, protests, and procurement-related information will apply in this operation.
- The standstill period will apply in all international processes.

Contract amendments exceeding 15% of the original value of the contract or the amount of €5 million for works and €200,000 for goods or services will only be eligible with the joint no objection of the IDB and EIB.</td></tr>
<tr><td>☒</td><td>Procurement supervision</td><td>The supervision method will be ex post, except where ex ante supervision is warranted. Where procurement is executed through the country system, supervision will be carried out through the country supervision system. The (i) ex ante, (ii) ex post, and (iii) country supervision method will be determined for each selection process. Ex post reviews will be conducted every year in accordance with the project supervision plan, subject to change during execution. The thresholds expressed in U.S. dollars for the ex post review are as follows:
<table>
<tr><th>Executing agency</th><th>Works</th><th>Goods/services</th><th>Consulting services</th></tr>
<tr><td>CELEC EP</td><td>US$3 million</td><td>US$250,000</td><td>US$100,000 (companies)
US$50,000 (individuals)</td></tr>
<tr><td>CELEC EP under EIB cofinancing</td><td>€5 million</td><td>€200,000</td><td>€200,000</td></tr>
</table></td></tr>
<tr><td>☒</td><td>Records and files</td><td>For the Bank's ex ante or ex post supervision, CELEC EP will maintain digital copies in a format that can be consulted or requested subsequently by the IDB or EIB.</td></tr>
</table>

Main procurement items

Description of the procurement	Selection method	New procedures/tools	Estimated date	Estimated amount (US$)
Goods				
Procurement of goods and related services for the Ecuador-Peru 500-KV interconnection, five sets	International competitive bidding		July 2023	127,073,663

Description of the procurement	Selection method	New procedures/tools	Estimated date	Estimated amount (US$)
Procurement of goods and related services for the works supervision innovation program	National competitive bidding		August 2023	150,000
Works				
Construction of civil works, electromechanical assembly, testing, and commissioning of the Ecuador-Peru 500-KV interconnection project, two sets.	International competitive bidding		January 2024	111,146,337
Nonconsulting services				
Firms				
Program of studies for Ecuador's integration into the regional electricity market.	Quality- and cost-based selection		August 2023	530,000
Gender action plan for transmission implemented	Quality- and cost-based selection		August 2024	100,000
Audits of program financial statements	Quality- and cost-based selection		August 2023	100,000
Program midterm evaluation	Quality- and cost-based selection		June 2024	500,000
Program final evaluation	Quality- and cost-based selection		January 2027	100,000
Individuals				
Consultant, environmental specialist	Individual consultation selection (3 CVs)		November 2023	129,000
Consultant, social specialist	Individual consultation selection (3 CVs)		November 2023	129,000

For the 18-month procurement plan, see required link 4.

IV. Financial Management Agreements and Requirements

☒	Programming and budget	The Organic Code of Planning and Public Finance (COPLAFIP) is applicable to Bank-financed programs and is implemented in the Integrated Public Finance Administration System. The executing agency will handle the budget allocation through the lead ministry, and the lead ministry will handle the budget allocation with the Ministry of Economy and Finance.

☒	Treasury and disbursement management	A special account will be used, which will be opened by CELEC EP at the Central Bank of Ecuador. The disbursements can be processed through the Online Disbursement platform or manually. The currency to manage the operation is U.S. dollars. The currency in circulation in Ecuador is U.S. dollars. The Bank will make loan disbursements in the form of advances of funds, based on actual liquidity needs, in accordance with the detailed financial plan and cash flow, for a maximum period of up to six months. At CELEC EP's request, the Bank may also make direct payments to suppliers or reimburse expenses. Accounting for advances will follow Operational Policy OP-273-12. A new disbursement can be made once at least 80% of the balance of previous advances has been justified.
☒	Accounting, information systems, and report generation	The accounting standards to be used are those applicable to public companies in Ecuador and will be standardized following the instructions issued by the Ministry of Economy and Finance. For the operation's accounting records, CELEC EP's integrated information system will be used as a technological platform, and the cash method (cash basis) will be used to prepare the special-purpose audited financial reports. In addition to the reports that will be issued by the integrated information system, there will be off-book records broken down by component to generate the corresponding financial reports.
☒	Internal control and internal auditing	The Constitution of the Republic of Ecuador establishes that the Office of the Comptroller General is responsible for managing the public sector control system. As part of this sector, CELEC EP has its own internal audit area.
☒	External control and financial reporting	CELEC EP will select and contract, using loan proceeds, the external audit services under the terms of reference previously agreed with the Bank. The external audit of the program will be conducted by independent auditors acceptable to the IDB in accordance with document OP-273-12, which will set the type of review, timing, and scope. The external auditor selected and the auditing standards to be applied will be acceptable to the Bank. Special-purpose financial statements will be the type of audited external report required in the operation. The audit firm must be engaged at least 120 days prior to the close of each year (31 December) or to the date of last disbursement. During execution, audited financial reports will be submitted annually, within 120 days of the closing date of each year or the date of the last disbursement for the final audit. The executing agency will prepare the program's financial reports, and the audit firm will be requested to provide an opinion thereon.
☒	Financial supervision of the operation	This will focus on cash flow programming and disbursement execution, portfolio reviews, and virtual or in-person supervision visits, as well as an analysis of the program's special-purpose audited financial statements and the report of the internal control financings issued by the program's external auditors.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/22

Regional. Loan ____/OC-RG to Empresa Pública Estratégica Corporación Eléctrica del Ecuador (CELEC-EP). Ecuador-Peru 500-Kilovolt Electricity Interconnection, Ecuadorian Section

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with Empresa Pública Estratégica Corporación Eléctrica del Ecuador (CELEC-EP), as borrower, and with the Republic of Ecuador, as guarantor, for the purpose of granting the former a financing aimed at cooperating in the execution of the project “Ecuador-Peru 500-Kilovolt Electricity Interconnection, Ecuadorian Section. Such financing will be for the amount of up to US$125,000,000, from the resources of the Bank’s Ordinary Capital, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on __ _____ 2022)

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