

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**PARAGUAY**

**SECOND OPERATION UNDER THE CONDITIONAL CREDIT LINE FOR  
INVESTMENT PROJECTS: SUSTAINABLE ENERGY INVESTMENT PROGRAM IN  
PARAGUAY**

**(PR-O0004)**

**EXPANSION OF THE HIGH-VOLTAGE TRANSMISSION SYSTEM—PHASE II**

**(PR-L1183)**

**LOAN PROPOSAL**

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4.	<a href="#">Procurement plan</a>

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## ABBREVIATIONS

ANDE	National Electricity Administration
CAF	Development Bank of Latin America
CCLIP	Conditional credit line for investment projects
EIRR	Economic internal rate of return
GDP	Gross domestic product
GWh	Gigawatt-hour
ICDF	International Cooperation and Development Fund of Chinese Taipei <sup>1</sup>
km	Kilometer
kV	Kilovolt
MWh	Megawatt
NDC	Nationally determined contribution
NPV	Net present value
PCU	Project coordination unit
SOFR	Secured Overnight Financing Rate
VMME	Office of the Deputy Minister of Mines and Energy

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<sup>1</sup> Use of the phrase “Chinese Taipei” does not in any way reflect the position of the IDB Group or any of its member countries regarding issues of national sovereignty or diplomatic recognition.

## PROJECT SUMMARY

### PARAGUAY SECOND OPERATION UNDER THE CONDITIONAL CREDIT LINE FOR INVESTMENT PROJECTS: SUSTAINABLE ENERGY INVESTMENT PROGRAM IN PARAGUAY (PR-O0004) EXPANSION OF THE HIGH-VOLTAGE TRANSMISSION SYSTEM—PHASE II (PR-L1183)

Financial Terms and Conditions							
Guarantor: Republic of Paraguay			Flexible Financing Facility <sup>(a)</sup>				
Borrower: National Electricity Administration (ANDE)							
Executing agency: ANDE, acting through the Office of Planning and Studies			Amortization period:	23.5 years			
Loan type: Specific investment loan			Disbursement period:	6 years			
			Grace period:	7 years <sup>(b)</sup>			
Source	Amount (US\$)	%	Interest rate:	SOFR-based			
IDB (Ordinary Capital):	260,000,000	79.7%	Credit fee:	(c)			
Cofinancing (parallel) (ICDF):	30,000,000	9.2%	Inspection and supervision fee:	(c)			
Local (ANDE):	36,320,359	11.1%	Weighted average life:	15.1 years			
Total:	326,320,359	100%	Approval currency:	U.S. dollar			
Project at a Glance							
<b>Objective of the CCLIP:</b> To contribute to economic development in Paraguay through a sustainable, reliable, and efficient supply of electricity.							
<b>Objective/description of the second operation:</b> The general objective of the second operation is to contribute to economic development in Paraguay through a reliable and efficient supply of electricity. The specific objectives are: (i) to help make the high-voltage transmission system more reliable and efficient; (ii) to help optimize the transmission system through technological upgrades; and (iii) to support the sustainable development of Paraguay’s electricity sector through gender equity and diversity.							
<b>Special contractual conditions precedent to the first disbursement of the loan:</b> Prior to the first disbursement of loan proceeds for the second operation, ANDE will submit evidence of (i) approval and entry into force of the project Operating Regulations under the terms and conditions previously agreed upon with the Bank (paragraph 3.5); and (ii) selection or designation, as appropriate, of key complementary project personnel—i.e., a financial specialist and procurement specialist in the project coordination unit, and an electrical engineer, environmental specialist, hygiene and safety specialist, and social specialist in the Office of Environmental Management—as described in paragraph 3.5.							
<b>Special contractual conditions for execution:</b> The project will be executed in accordance with the contractual provisions on environmental, social, health, and safety matters included in Annex B of the environmental and social management report ( <a href="#">required link 3</a> ).							
<b>Exceptions to Bank policies:</b> A partial waiver of the CCLIP policy (document GN-2246-13) is being requested with regard to the eligibility criterion described in paragraph 3.5(v)(c) as it pertains to satisfactory execution of the first individual operation under CCLIP PR-O0004 (paragraph 4.2(b)). In approving the loan proposal for CCLIP operation PR-O0004, the Bank’s Board of Executive Directors approved a partial exception to the Bank’s policy on guarantees required from the borrower (document GP-104-2); as a result, the Republic of Paraguay will only guarantee ANDE’s financial obligations for this second individual operation (paragraph 3.3).							
Strategic Alignment							
Challenges: <sup>(d)</sup>	SI <input type="checkbox"/>		PI <input checked="" type="checkbox"/>		EI <input type="checkbox"/>		
Crosscutting themes: <sup>(e)</sup>	GE <input checked="" type="checkbox"/> and DI <input checked="" type="checkbox"/>		CC <input checked="" type="checkbox"/> and ES <input checked="" type="checkbox"/>		IC <input type="checkbox"/>		
Sustainable Development Goals: <sup>(f)</sup>	SDG1 <input type="checkbox"/>	SDG2 <input type="checkbox"/>	SDG3 <input type="checkbox"/>	SDG4 <input type="checkbox"/>	SDG5 <input checked="" type="checkbox"/>	SDG6 <input type="checkbox"/>	SDG7 <input checked="" type="checkbox"/>
	SDG8 <input checked="" type="checkbox"/>	SDG9 <input checked="" type="checkbox"/>	SDG10 <input type="checkbox"/>	SDG11 <input checked="" type="checkbox"/>	SDG12 <input type="checkbox"/>	SDG13 <input checked="" type="checkbox"/>	SDG14 <input type="checkbox"/>
	SDG15 <input type="checkbox"/>	SDG16 <input type="checkbox"/>	SDG17 <input checked="" type="checkbox"/>				

<sup>(a)</sup> 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.

<sup>(b)</sup> 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.

- <sup>(c)</sup> 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 applicable policies.
- <sup>(d)</sup> SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).
- <sup>(e)</sup> GE (Gender Equality) and DI (Diversity); CC (Climate Change) and ES (Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).
- <sup>(f)</sup> SDG (Sustainable Development Goal). Click [here](#) for further information on the SDGs, and consult the [IDB Group's methodology](#) for classification of projects according to the SDGs.

## I. PROJECT DESCRIPTION AND RESULTS

### A. Background, problem addressed, and rationale

- 1.1 **Macroeconomic context.** Paraguay's economy shrank 0.6% in 2020 due to the pandemic and grew by an estimated 5% in 2021.<sup>2</sup> It is projected to grow 3.7% in 2022, although this outlook may be adversely impacted by the current drought and its toll on the country's main economic activities. The fiscal accounts also deteriorated, although the government is complying with its fiscal consolidation plan. The fiscal deficit in 2021 was 3.6% of gross domestic product (GDP), and public investment totaled 2.9% of GDP.<sup>3</sup> After 15 years of declining poverty and extreme poverty rates, this trend was reversed in 2020 as an estimated 265,000 fell below the poverty line. The labor market is recovering, and the unemployment rate was 6.5% as of the third quarter of 2021.<sup>4</sup>
- 1.2 Paraguay's electricity generation capacity is 8,782 megawatts (MW),<sup>5</sup> with a maximum power demand of 3,563 MW (2020).<sup>6</sup> The National Electricity Administration (ANDE) projects that demand for power will reach current installed capacity in 2036.<sup>7</sup> One hundred percent of the electricity consumed in Paraguay is renewable (hydropower), with demand equivalent to 16,557 gigawatt-hours (GWh) in 2018.<sup>8,9</sup> A total of 46,373 GWh was generated, most of it by the Itaipú and Yacyretá hydropower plants, with a significantly smaller output from the Acaray hydropower plant (2018).<sup>10</sup> More than 60% of the generated electricity was exported (21% to Argentina, 79% to Brazil).<sup>11</sup> Paraguay currently has an electrification rate of 99.6%.<sup>12</sup>
- 1.3 **Transmission infrastructure.** As of 2020, ANDE had 711 kilometers (km) of 500-kilovolt (kV) transmission lines, 4,727 km of 220-kV transmission lines, and 1,355 km of 66-kV transmission lines,<sup>13</sup> which make up the National Interconnected System. Part of the transmission infrastructure is operating near its technical design limits. About 56% of demand is concentrated in the central and metropolitan areas, which are served by transmission lines from Itaipú and Yacyretá.<sup>14</sup> The only supply of 500-kV power to the metropolitan system is through the Villa Hayes

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<sup>2</sup> Central Bank of Paraguay.

<sup>3</sup> Paraguay's Ministry of Finance.

<sup>4</sup> Paraguay's National Statistics Institute.

<sup>5</sup> Itaipú binational (Paraguay–Brazil) plant: 7,000 MW; Yacyretá binational (Paraguay–Argentina) plant: 1,550 MW; Acaray hydropower plant: 232 MW.

<sup>6</sup> Preliminary electricity report 2020, Office of the Deputy Minister of Mines and Energy (VMME).

<sup>7</sup> The 2019 market study projects maximum demand at 7,869 MW in 2030.

<sup>8</sup> ANDE presentation, 2019.

<sup>9</sup> Demand is concentrated in residential customers (44.2%) and commercial, general, and municipal customers (37.1%). The remainder is distributed among industrial consumers, public lighting, and other sectors. ANDE 2018 Annual report.

<sup>10</sup> National Energy Balance Sheet 2020, VMME.

<sup>11</sup> In [Argentina](#), 64% of the supply is thermal; in [Brazil](#), 14.2% is fossil.

<sup>12</sup> [General Office of Statistics, Surveys, and Censuses](#) 2018.

<sup>13</sup> Transmission Master Plan 2021-2030, ANDE.

<sup>14</sup> This operation does not entail support for or involvement in the negotiation of Annex C of the Itaipú Treaty between Paraguay and Brazil.

electrical substation, which combines all transformation capacity at 500 kV and 200 kV, thus constituting a key piece of infrastructure for the reliability of the national electricity supply.

- 1.4 **Structure of the sector.** ANDE is a decentralized, autonomous entity in the public administration system with legal status and its own assets. Governed by Law 966 of 1964, its founding charter, ANDE is responsible for electricity generation, transmission, distribution, and marketing in Paraguay. ANDE purchases energy from Itaipú and Yacyretá, both binational independent entities, and performs the functions of investment planning and programming, while providing public lighting for the country. The Ministry of Public Works and Communications, acting through the Office of the Deputy Minister of Mines and Energy (VMME), proposes policies, regulations, and applications for the energy sector. The rate policy for public utilities is set by the National Economic Team, consisting of the ministers of finance, public works and communications, agriculture, and industry and commerce, as well as the president of the Central Bank of Paraguay.<sup>15</sup>
- 1.5 **Problem addressed.** ANDE supplies electricity to 99.6% of the population, but points of power generation are very far from consumption hubs. Current transmission capacity is insufficient to ensure a reliable supply of electricity to leading consumption hubs in accordance with projected short- and medium-term demand. At peak-demand times, the 500-kV transmission lines and the Villa Hayes substation operate at near capacity. This puts transformers at increased risk of being overloaded, which has a cascading effect on the stability of the electricity supply and raises the risk of unscheduled interruptions. Unless investments in power transmission are made over the medium term, rising demand for electricity will surpass the capacity for supply and will adversely affect electricity service.
- 1.6 In terms of system efficiency, total electricity losses in 2018 averaged 24.5% (5.36% in transmission and 19.14% in distribution), exceeding the average for Latin America and the Caribbean (17%).<sup>16,17</sup> ANDE is currently carrying out a program to reduce electricity losses in distribution, with support from the Development Bank of Latin America (CAF).
- 1.7 **ANDE expansion plan.** On 17 May 2021, four master plans for the sector were approved by Presidential Decree 5238: the [Master Plan for Transmission](#) and the master plan for distribution for 2021-2030; the short- and long-term master plan for information and communication technology for 2021-2030; and the short-, medium-, and long-term master plan for generation for 2021-2040, all of which will be developed by ANDE.<sup>18</sup> The Master Plan for Transmission includes some US\$900 million in works for transmission, including the Itaipú–Villa Hayes and Ayolas–Valenzuela 500-kV transmission lines and the Emboscada and Colonia Yguazú 500-kV substations. In the short term, ANDE plans to construct the 500-kV transmission line from the Yguazú substation to the substation to be financed by

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<sup>15</sup> ANDE conducts rate studies and proposes adjustments. The government ultimately makes the decision. According to Law 966, rates must cover costs and generate revenue equivalent to 8% of assets.

<sup>16</sup> [Latin American Energy Organization \(OLADE\) \(2016\)](#).

<sup>17</sup> The Bank supported actions to reduce electricity losses from 32.6% in 2007 to the current 24,5% through a multiphase program (loans 1835/OC-PR and 2891/OC-PR).

<sup>18</sup> Approved by Decree 5283.



the first operation under CCLIP PR-O0004 to strengthen the 500-kV transmission system. The plan includes works in generation, including machinery for automation of the existing Yguazú dam, the expansion of the Acaray hydropower plant, construction of new power plants and small hydropower plants, solar generation plants, and hybrid systems in remote areas. Plans for the National Interconnected System through 2025 are illustrated in Figure 1.

Figure 1. Single-line diagrams of required 500-kV works



- 1.8 **Evidence.** The use of transmission lines at their technical limit impacts the flexibility and safety of system operation, increasing technical losses, causing equipment to deteriorate more quickly and shortening its useful life,<sup>19,20</sup> increasing the likelihood of failures, and making the system less operationally efficient.<sup>21</sup> Developing new transmission lines that meet quality standards has proven effective in enhancing service quality and meeting increased demand (BO-L1072/2654/BL-BO).<sup>22</sup>
- 1.9 **Rationale.** The second operation under the CCLIP (the project), including works to expand the 500-kV and 220-kV system,<sup>23</sup> will address problems related to capacity and reliability in Paraguay's electricity transmission system over the short and medium terms, thereby helping to ensure efficient supply to meet projected demand. The 500-kV transmission line along the right side of the Itaipú-Villa

<sup>19</sup> [IEEE, 2013.](#)

<sup>20</sup> [Cajamarca et al. \(2010\).](#)

<sup>21</sup> [Shahidehpour, M. and Marwali, M. \(2000\).](#)

<sup>22</sup> [Project completion report.](#)

<sup>23</sup> The transmission lines were designed in view of points of generation and consumption, as well as the route that constitutes the best alternative in terms of minimizing environmental and social risks.

Hayes line will increase transmission capacity to leading consumption hubs, meet rising demand for electricity<sup>24</sup> due to population growth<sup>25</sup> and increased electricity consumption, and make service more reliable and efficient by reducing bottlenecks in the system. The project's planned investments will contribute to regional electrical integration through strengthened coordination between ANDE and the binational Itaipú and Yacyretá plants by synchronizing these systems and optimizing operation of the National Interconnected System.

- 1.10 **Strategy and rationale for the conditional credit line for investment projects (CCLIP).** ANDE's master plan requires greater investment over the short and medium terms. The CCLIP will provide timely resources to the borrower and will bring continuity to the investment plan with strategic interventions throughout the period it covers. The CCLIP is an effective instrument for the Bank to maintain its support for the financing of priority works in the sector, guiding the development of infrastructure in accordance with high standards of quality and economic, social, and environmental sustainability, and greater resilience.
- 1.11 **The CCLIP and the first individual operation.** On 6 May 2020, the Bank's Board of Executive Directors approved the CCLIP for the Sustainable Energy Investment Program in Paraguay (PR-O0004) through Resolution 38/20, with the objective of contributing to economic development through a sustainable, reliable, and efficient supply of electricity. The CCLIP, to be available for 12 years in the amount of US\$400 million, encompasses three individual loan operations. ANDE will be the borrower and executing agency of all three operations.
- 1.12 The first operation under the CCLIP, titled "Expansion of the High-voltage Transmission System and Energy Efficiency Actions" (loan 5023/OC-PR), was approved by the Bank's Board of Executive Directors on 6 May 2020 (Resolution DE-37/20). ANDE and the Bank signed the loan contract for up to US\$70 million from the Bank's Ordinary Capital. ANDE's obligations were guaranteed by the Republic of Paraguay pursuant to the contract for loan 5023/OC-PR. The specific objectives of the first operation are (i) to help make the high-voltage transmission system more reliable and efficient, and (ii) to make ANDE's commercial buildings and public lighting more energy-efficient. The loan contract for the first operation is currently in the process of being ratified by Paraguay's Congress.<sup>26</sup> The investments in electrical transmission infrastructure supported by the first individual operation and those proposed in this second individual operation are separate and complementary, and they follow the logic and sequence of investments described in ANDE's master plan (paragraph 1.7).
- 1.13 **Innovation and digitalization.** Digital technologies make electricity systems more connected, smart, efficient, reliable, and sustainable. The 2020 edition of the Bank's Development in the Americas publication, titled [From Structures to Services](#), notes that "technological innovation provides opportunities for service providers to increase efficiency while simultaneously providing better and more affordable services to users." ANDE's contingency management system for the

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<sup>24</sup> Maximum demand for electricity consumption is projected to average 7.5% annual growth in 2019-2040.

<sup>25</sup> Year-on-year population growth is projected at 1.1%, General Office of Statistics, Surveys, and Censuses.

<sup>26</sup> Ratification is expected to be completed by the second quarter of 2022. ANDE is preparing the bidding documents, which are slated for publication in March 2022, pending approval by Congress.

500-kV system allows for effective interconnection between the Itaipú and Yacyretá hydropower plants. Expanding this system will help optimize energy resources in a manner conducive to operation of the SIN, thereby averting the need to cut power for operational procedures. Renewing the license for the high-performance transmission planning and analysis (PSSE) software will allow for more accurate scenario assessments for synchronized operation of Paraguay's electrical grid and the regional electricity system, which will strengthen planning for these systems and support the agenda for regional electrical integration.

- 1.14 **Gender equity, inclusion, and corporate social responsibility.** In 2020, ANDE conducted an internal diagnostic assessment of gender issues. Among the main gaps identified was the fact that 83% of ANDE's leadership positions are held by men.<sup>27</sup> Women account for 20% of all people working at ANDE,<sup>28</sup> mainly in administrative (46%) and professional (29%) positions, and their representation in technical and operational units is low (7% and 6%, respectively).<sup>29</sup> On the basis of this diagnostic assessment, ANDE's Gender Committee developed a gender action plan.<sup>30</sup>
- 1.15 People with disabilities make up about 10% of Paraguay's population, according to the General Office of Statistics, Surveys, and Censuses.<sup>31</sup> Law 2479/2004, as amended by Law 3585/2008, requires at least 5% of the staff of every public institution to consist of people with disabilities.<sup>32</sup> ANDE has policies on the inclusion of people with disabilities in its workforce.<sup>33</sup> In 2019, ANDE hired 70 employees with disabilities for administrative assistant positions. However, gaps still need to be closed in the organization and inclusion of people with disabilities in public institutions. To this end, services for people with disabilities will be strengthened through adjustments related to infrastructure and information.
- 1.16 The project's gender equity and diversity actions will promote the inclusion of women and people with disabilities in the sector, providing continuity to implementation of ANDE's action plan for gender equity, inclusion,<sup>34</sup> and corporate social responsibility. The main topics addressed in the gender action plan are (i) preventing workplace sexual harassment and the normalization of such behavior; (ii) retaining, promoting, and helping to increase the number of women in technical positions traditionally held by men; (iii) internally promoting a gender focus in human resource management by contextualizing merit systems, reviewing job descriptions by unit and level, and eradicating gender stereotypes and mitigating unconscious bias; and (iv) promoting work-life balance.

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<sup>27</sup> Aequales. 2021. Diagnostic assessment report: ANDE.

<sup>28</sup> Idem.

<sup>29</sup> ANDE. 2018.

<sup>30</sup> The Gender Action Plan is included in the [gender annex](#).

<sup>31</sup> [National Statistics Institute. 2020.](#)

<sup>32</sup> Government of Paraguay. 2020. [Report on the inclusion of people with disabilities in the public-sector workforce as of March 2020.](#)

<sup>33</sup> [Human resources management policy; Law 6873; Paraguay's law on persons with disabilities.](#)

<sup>34</sup> The analysis for the action plan is in preparation.

- 1.17 **Climate change.** Paraguay's third national communication on climate change highlights two important studies on climate scenarios and projections.<sup>35</sup> Under RCP 4.5 and RCP 8.5<sup>36</sup> scenarios for 2050, both studies indicate a clear convergence toward a gradual, unequivocal increase in annual average temperature throughout the country, as well as a generalized increase in average and extreme precipitation, particularly in eastern Paraguay, including Alto Paraná department. Accordingly, and in view of projections of increasingly intense precipitation during the rainy season in the project area, the design of any project-financed infrastructure subject to flood risk<sup>37</sup> will include a flood frequency analysis that considers the effects of climate change and reflects any necessary measures for climate resilience. To this end, the guidelines of [the Bank's risk methodology](#) will be followed, and the third priority objective of the [nationally determined contribution](#) (NDC) related to construction of climate-resilient infrastructure will be directly addressed.
- 1.18 Land use, changes in land use, and forestry are the leading contributors to Paraguay's net greenhouse gas emissions. Since its first NDC (2015), Paraguay has committed to reducing its projected emissions for 2030 by 20%. The project's investments to mitigate the impact on carbon sinks due to infrastructure construction reinforce the NDC's prioritization of carbon sink conservation ([optional link 4](#)).
- 1.19 **Bank experience in the sector.** The Bank has extensive knowledge of the Paraguayan energy sector and has been a strategic partner of ANDE. The Bank has financed more than US\$440 million in loans and technical-cooperation operations. It approved the first operation of this CCLIP, titled "Expansion of the High-voltage Transmission System and Energy Efficiency Actions" [loan 5023/OC-PR; US\$155 million (IDB: US\$70 million; JICA: US\$85 million) (2020)]; and the Multiphase Power Transmission Program—Phase I (loan 1835/OC-PR; US\$69 million) (2006) and Phase II (loan 2891/OC-PR; US\$50 million) (2012), with good results. It also approved a loan for the Rehabilitation and Modernization Program for the Acaray Hydroelectric Power Plant (loan 4690/OC-PR; US\$125 million) (2018), which complements this new operation by helping ANDE address the main challenges of the sector. The Bank is supporting the sector through the following nonreimbursable technical-cooperation operations: (i) operation ATN/OC-15910-PR for client support, which includes the modernization of infrastructure, access to energy, and energy efficiency in public lighting; (ii) operations ATN/OC-17356-PR for client support and ATN/GN-16821-PR for client support, to provide assistance to the VMME in accordance with the objectives of Energy Policy 2040; and (iii) operations ATN/JF-17929-PR, ATN/OC-17322-PR, and ATN/OC-19107-PR

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<sup>35</sup> The first of these studies is an assessment of vulnerability and capacity to address climate change challenges and opportunities, prepared by Research for Development and the Scientific Research Development Center (2016); the second is a study of the economics of climate change in Paraguay, prepared by the Economic Commission for Latin America and the Caribbean (2014).

<sup>36</sup> "RCP" stands for "representative concentration pathway."

<sup>37</sup> The final design work for the transmission lines will reflect the recommendations on mitigation, adaptation, and resilience put forward in the environmental and social management report.

- for operational support to develop studies to prepare potential new operations under the CCLIP (paragraph 1.7).
- 1.20 **Lessons learned.** The project takes into account lessons learned in previous operations,<sup>38</sup> e.g.: (i) gains in effectiveness and efficiency as a result of involving, from the project design phase, the relevant areas of ANDE in both preparation and execution; assistance for preparation of technical bid packages; and support for resettlement and compensation plans; (ii) since the easement strip typically becomes the critical path for the works, it is critical to have an experienced execution unit, and it is advisable to have an experienced external supervisory firm for technical, environmental, and social oversight in order to support the executing agency, anticipate potential problems during performance of the contracts, and recommend actions; and (iii) metering equipment should be used at the substations of the transmission system to identify key points and segments in real time to reduce technical losses of electricity.
- 1.21 **Country strategy in the sector.** The project is aligned with the [National Development Plan Paraguay 2030](#), aimed at enhancing the population's well-being by improving the quality of public utilities, particularly with the strategic focus on inclusive economic growth and the crosscutting area of competitiveness and innovation. The project contributes to Paraguay's commitment to ensuring access to affordable, safe, sustainable energy, within the framework of Sustainable Development Goal 7, affordable and clean energy, and it is aligned with ANDE's master plans (paragraph 1.7).
- 1.22 **The Bank's country strategy.** The project is aligned with the IDB Group Country Strategy with Paraguay 2019-2023 (document GN-2958), particularly in the priority area of productive and resilient infrastructure and the objective of enhancing the quality of service and electricity coverage. The operation is included in the 2022 Operational Program Report.<sup>39</sup>
- 1.23 **Consistency with the Public Utilities Policy (document GN-2716-6).** The project is consistent with the [Public Utilities Policy](#) as it contributes to the use of renewable energy, enhanced efficiency, and reliability of the power grid. The project satisfies the objectives, principles, and conditions of economic viability and financial sustainability set forth in this policy.
- B. Objective, components, and cost**
- 1.24 **Objective.** The general objective of the second operation is to contribute to economic development in Paraguay through a reliable and efficient supply of electricity. The specific objectives are (i) to help make the high-voltage transmission system more reliable and efficient, (ii) to help optimize the transmission system through technological upgrades; and (iii) to support the sustainable development of Paraguay's electricity sector through gender equity and diversity.
- 1.25 **Component I. Investments in high-voltage transmission. US\$281.5 million (IDB: US\$258 million; ANDE: US\$23.5 million).** This component will help make the high-voltage transmission system more reliable and efficient through civil and

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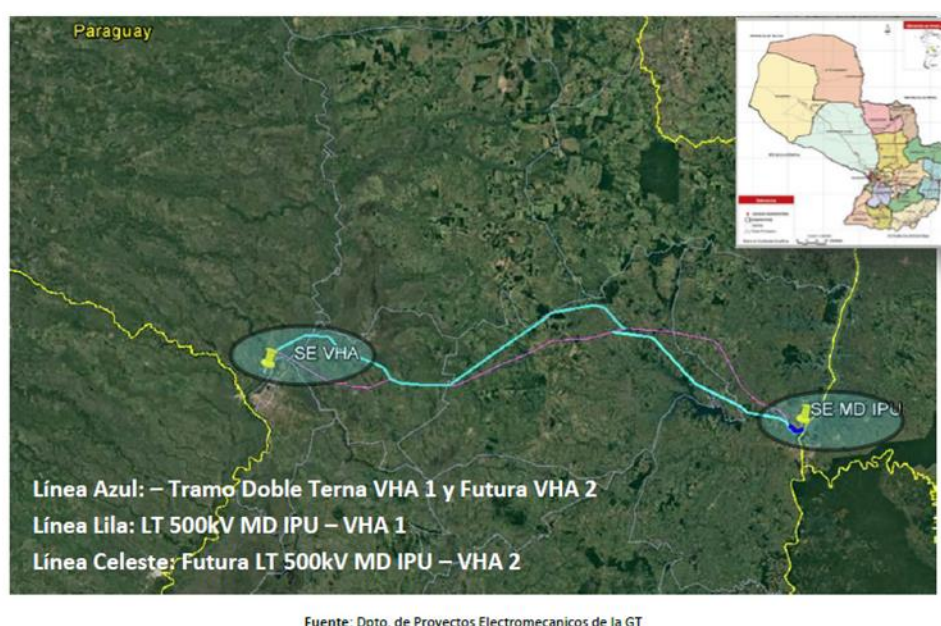
<sup>38</sup> These operations are listed in paragraph 1.20.

<sup>39</sup> In the process of being approved.



electromechanical works for transmission lines, and it will finance: (i) the transmission line for the second 500-kV circuit, approximately 369.5 km long, between the Margen Derecha and Villa Hayes substations; (ii) expansion of substations (Margen Derecha, Villa Hayes, and Valenzuela), including line outputs; (iii) the 60-km Valenzuela–Guarambaré 220-kV transmission line; and (iv) rehabilitation of the existing 30-km San Patricio–Guarambaré 220-kV transmission line. This component will also provide financing to supervise the works, implement the environmental and social management plan, secure environmental service certificates and easements as appropriate, and procure equipment, materials, and supplies.

**Figure 2. Geographic location of the project<sup>40</sup>**



- 1.26 This component will include activities to promote digitalization of the electrical grid through the expanded use of monitors and control of the SIN and ANDE's contingency management system. To expand the contingency management system, programmable logic controllers and synchrophasors for monitoring and control of the SIN will be provided at line-in and line-out positions, and personnel will be trained in the use of this equipment ([optional link 3](#)).
- 1.27 This component will also contribute to the sustainable development of Paraguay's electricity sector through gender equity and diversity ([optional link 5](#)). Financing will be provided for such actions as: (i) monitoring and completion of activities included in the gender action plan prepared in 2021: (a) narrowing the gender gap in ANDE's technical units and leadership positions; (b) promoting strengthened and appropriate institutional initiatives for gender equity; (c) creating a work environment conducive to work-life balance; and (d) preventing, addressing, and punishing workplace sexual harassment in ANDE; and (ii) monitoring of the

<sup>40</sup> The blue line denotes the 8.5-km transmission line from the Margen Derecha Itaipú substation.

implementation of guidelines on inclusive services for people with disabilities (paragraph 1.15).

- 1.28 **Component II. Investments in underground transmission lines.<sup>41</sup> US\$41.3 million (ANDE: US\$12.8 million; ICDF: US\$28.5 million).** This component will help make the high-voltage transmission system more reliable and efficient, optimize the system through technological updates to underground transmission line works, and equipment upgrades. This component will finance (i) construction of the 220-kV underground transmission lines between San Lorenzo and Villa Aurelia (9 km) and between Barrio Molino and Villa Aurelia (8 km); (ii) expansion of substations (San Lorenzo, Villa Aurelia, and Barrio Molino), including line outputs; and (iii) expansion of the Limpio substation, including upgrading the static VAR compensator. This component will also provide financing to supervise the works, implement the environmental and social management plan, secure environmental service certificates and easements as appropriate, and procure equipment, materials, and supplies.
- 1.29 The San Lorenzo–Villa Aurelia and Barrio Molino–Villa Aurelia transmission lines will help meet growing demand due to the increase in urban density and enhance the reliability and safety of the electricity supply from major terminal substations and secondary hubs. The Villa Aurelia and Barrio Molino substations are key feed-in points for the metropolitan system's 66-kV circuit. This component includes financing for construction of the line-out/line-in position for the 220-kV transmission line for the corresponding substations.
- 1.30 **Project administration and management (US\$3.5 million).** This component will finance the costs of project administration, monitoring, and evaluation, which include technical assistance, external audits, and midterm and final evaluations of the project.
- 1.31 **Main outcome indicators, benefits, and beneficiaries.** This operation is expected to yield the following outcomes: (i) increased capacity of the National Interconnected System to satisfy demand over the short and medium terms, particularly in the central and metropolitan systems; (ii) increased reliability and efficiency in electricity service, through an improved differential in expectations of unsupplied energy and reduced electricity losses in system transmission; (iii) reduced time needed for synchronized operation of the National Interconnected System; and (iv) increased participation of women in leadership positions. The project will help transmit energy generated by hydropower plants, benefitting some 7,252,672 residents connected to the National Interconnected System<sup>42</sup> while increasing available power and enhancing the quality of the supply. The project's beneficiary population includes all people in Paraguay<sup>43</sup> who are connected to the National Interconnected System.

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<sup>41</sup> Component II will be financed by the ICDF but administered by the Bank (paragraph 1.28).

<sup>42</sup> Population projection 2000-2025 (General Office of Statistics, Surveys, and Censuses), 2015.

<sup>43</sup> ANDE's Market Studies Department, based on "Total Population Projection, 2015," prepared by the General Office of Statistics, Surveys, and Censuses.

## **C. Strategic alignment**

- 1.32 The project is consistent with the second Update to the Institutional Strategy (document AB-3190-2) and is aligned with the development challenge of productivity and innovation, as it will implement innovative technologies that will make the service more reliable and the system more efficient in the transmission phase, as well as promoting digitalization in infrastructure. The project is also aligned with the crosscutting areas of: (i) Gender Equality and Diversity, by promoting inclusion through implementation of the gender action plan and the guidelines for inclusive services for people with disabilities (paragraph 1.14); and (ii) Climate Change and Environmental Sustainability, by reducing greenhouse gas emissions through an efficient supply of electricity to help export renewable energy and displace conventional thermal generation of electricity in neighboring countries (paragraph 1.17). Notably, 99.99% of the project's resources are invested in climate-change mitigation activities, in accordance with the [joint methodologies of the multilateral development banks](#), contributing to the IDB Group's target of increasing financing for climate-change projects to 30% of all approvals by 2020. The project will also contribute to the Corporate Results Framework 2020-2023 (document GN-2727-12) through the indicator of emissions avoided by displacing more highly polluting generation processes in Brazil and Argentina.
- 1.33 The project is aligned with the IDB Infrastructure Strategy: Sustainable Infrastructure for Competitiveness and Inclusive Growth (document GN-2710-5), as it modernizes infrastructure to meet the demand for energy in a sustainable manner for both residents and production hubs, and with the Climate Change Sector Framework Document (document GN-2835-8). The project is consistent with the Energy Sector Framework Document (document GN-2830-8), as it will support sustainability and safety in the sector through investments to help reduce energy expenditures and strengthen infrastructure in the National Interconnected System; and with the Gender and Diversity Sector Framework Document (document GN-2800-8), as it includes specific actions to promote the participation of women and people with disabilities in the sector's workforce.
- 1.34 The project is consistent with Vision 2025 and the pillars of (i) digitalization (paragraph 1.12); (ii) climate-change actions (paragraph 1.16); and (iii) gender and diversity (paragraphs 1.13 and 1.14).

## **D. Viability analysis**

- 1.35 **Technical viability.** The [project's technical viability](#) was satisfactorily assessed by the Office of Planning and Studies of the Division of Investment Studies and Management under ANDE's Department of Studies and Economic Assessments.
- 1.36 **Social and environmental viability.** The project will support a national electricity system based on renewable energies and will thereby help achieve overall objectives related to climate-change mitigation. The operation is environmentally and socially viable with effective implementation of the measures described in the environmental and social management plan and the [compensation and resettlement plan](#), which were developed in preparing the operation; as well as with the provision and maintenance of economic and human resources needed for implementation and monitoring.



- 1.37 **Socioeconomic viability.** The economic evaluation was based on a cost-benefit analysis performed in scenarios with and without the project. The economic evaluation of all project investments and activities yielded an economic internal rate of return (EIRR) of 56% and a benefit/cost ratio of 7.20. The economic evaluation of Component I yielded an EIRR of 40.3% and a net present value (NPV) of US\$927 million at a 9% discount rate. This evaluation took into account (i) investment costs; (ii) economic benefits of decreased electricity losses in transmission; (iii) economic benefits of a decrease in unsupplied energy in the event of a supply failure or limited supply capacity; and (iv) sale of incremental power. The economic evaluation of Component II yielded an EIRR of 145.9% and an NPV of US\$784.7 million. The analysis included the economic benefit resulting from decreased electricity losses, at average prices for energy purchases, as was done for Component I, under various rate scenarios for Itaipú. A sensitivity analysis taking into account a 20% investment cost and a 20% decline in projected revenue yielded satisfactory results ([optional link 1](#)).
- 1.38 **Institutional and financial viability.** A [financial sustainability analysis of ANDE](#) was carried out, including projections during the project execution period and through 2030<sup>44</sup> under the assumption of execution of ANDE's infrastructure investment master plans<sup>45</sup> at an average annual investment level of US\$738 million for the 2022-2030 period (over three times the annual average of investments made during the 2017-2021 period).<sup>46</sup> At the close of fiscal year 2021, ANDE had an estimated US\$839 million equivalent in annual revenues from energy sales and US\$898.3 million equivalent in total revenues, including other revenue sources. Annual cash balances—excluding costs of energy purchases—are projected to increase gradually and are estimated at US\$567 million per year for 2022-2030. The costs of energy purchases will depend primarily on future rates for the binational Itaipú plant, as a result of the agreement between Paraguay and Brazil. There will be two main options in this regard. The first option is to maintain the current energy purchase rate, equivalent to US\$22.60 per kilowatt-month. The second option is to adjust the rate in accordance with Annex C of the current treaty, in which case, in 2022, the rate would decline to about US\$19.09 per kilowatt-month, and to US\$9.61 per kilowatt-month between 2023 and 2030.
- 1.39 ANDE's financial situation would be more favorable under the second option, but in both cases, its short-term operations (2022-2023) would be compromised given the levels of the cash balances expected during that period. Particularly noteworthy is the impact of the high level of annual investment considered in the master plans compared to the lower recent historical levels of investment. If the current energy purchase rate from Itaipú is maintained, an adequate cash flow could be maintained, considering an annual level of investment on the order of US\$323 million instead of the US\$738 million per year for the 2022-2030 period, as set forth in the master plans. If the energy purchase rate from Itaipú is reduced to the levels set forth in the current treaty, an annual level of investment on the

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<sup>44</sup> This analysis used an annual discount rate of 10.11% in accordance with ANDE's updated weighted average cost of capital.

<sup>45</sup> The works planning in the master plans for generation, transmission, distribution, and information and communication technology were considered for the 2022-2030 period.

<sup>46</sup> The average annual investment over the last five years (2017-2021) is approximately US\$223 million, reaching its peak level in 2021 (US\$311 million).

order of US\$616 million could be maintained. In both cases, the proposed project would be amortized during a projected period of break-even or positive cash flow balances. In short, the described financial constraints will not arise if an average annual investment range of US\$323 million to US\$616 million is maintained, depending on the energy purchase prices. In both cases, these levels of investment are higher than historical levels. ANDE is taking measures to meet its short-term financial challenges and will adopt measures to move forward with its investment plans appropriately, that is, without exceeding an annual investment range that allows it to service its external and counterpart financing obligations and maintain an adequate cash flow.

## II. FINANCING STRUCTURE AND MAIN RISKS

### A. Financing instruments

- 2.1 **Loan modality and financial structure.** This will be the second operation under the sovereign-guaranteed CCLIP available for 12 years for US\$400 million, which includes three loan operations as part of a scope that was approved in 2020. This second operation will be a specific investment loan, since the projects in question have been identified, the relevant technical, economic, and financial viability studies have been performed, costs have been determined, and preliminary designs have been completed. ANDE has sufficient information to move forward with the preparation of bid documents and begin the international competitive bidding process to hire a firm responsible for the final designs and construction of the works.
- 2.2 **Cost and financing.** The estimated cost of the project to be supported by this second operation is US\$326.3 million, of which up to US\$260 million will be financed from the Bank's Ordinary Capital, US\$30 million from the parallel financing of the International Cooperation Development Fund of Chinese Taipei (ICDF), and US\$36.3 million in local counterpart funding from ANDE. Because the ICDF's financing will be issued directly to Paraguay, the Bank will neither receive nor administer the resources from the ICDF loan. To administer the activities to be financed by ICDF resources, the Bank and ICDF will sign a coordination agreement specifying the Bank's technical and operational responsibilities, such as reviewing disbursement requests, reviewing procurement documentation, and supervising the program. The Bank will charge ICDF a service fee for this purpose,<sup>47</sup> and this fee will be distributed among the Bank departments supporting program preparation, execution, and monitoring. This agreement will also help facilitate smooth cooperation between the Bank and the ICDF. The ICDF's financing is slated for approval by its board of directors on 30 March 2022. The disbursement period will be six years, the last three years of which are expected to feature contracts that are still open and in execution, including final justifications for uses of funds and slack times for large procurement items in the event of delays in the bidding process and/or contract performance. The project costs are shown in **Table 1**.

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<sup>47</sup> This fee will be 0.5% of the amount of the ICDF loan.

**Table 1. Estimated project costs (US\$ millions)**

Components	IDB	Local	ICDF	Total	%
Component I. Investments in high-voltage transmission	258.0	23.5	0.0	281.5	86.3%
500-kV transmission line works	183.3	17.0	0.0	200.3	61.4%
220-kV transmission line Works	38.4	3.0	0.0	41.4	12.7%
Substation works	34.3	3.5	0.0	37.8	11.6%
Other activities	2.0	0.0	0.0	2.0	0.6%
Component II. Investments in underground transmission lines	0.0	12.8	28.5	41.3	12.6%
Underground transmission line works	0.0	5.9	15.7	21.6	6.6%
Substation works	0.0	3.1	8.1	11.1	3.4%
Upgrade of static VAR compensator	0.0	3.8	4.8	8.6	2.6%
Administration and project management	2.0	0.0	1.5	3.5	1.1%
<b>Total</b>	<b>260.0</b>	<b>36.3</b>	<b>30.0</b>	<b>326.3</b>	<b>100%</b>

\*The amounts included in the table include local taxes, pursuant to Bank policies.

## 2.3 Disbursement timetable.

**Table 2. Disbursement timetable (US\$ millions)**

Source of financing	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	% total
IDB	52.65	102.05	91.56	13.46	0.21	0.08	260.00
%	20.25	39.25	35.21	5.18	0.08	0.03	100

**Table 3. Projected execution (US\$ millions)**

Source of financing	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	% total
IDB	11.87	133.97	93.67	20.17	0.24	0.08	260.00
ICDF	6.71	16.53	6.76	0	0	0	30.00
ANDE (local contribution)	2.26	20.19	11.98	1.88	0	0	36.32
<b>Total</b>	<b>20.84</b>	<b>170.70</b>	<b>112.41</b>	<b>22.05</b>	<b>0.24</b>	<b>0.08</b>	<b>326.32</b>
<b>%</b>	<b>6.39</b>	<b>52.31</b>	<b>34.45</b>	<b>6.76</b>	<b>0.07</b>	<b>0.02</b>	<b>100</b>

## B. Environmental and social risks

2.4 In accordance with the Bank's Environment and Safeguards Compliance Policy (operational policy OP-703), this is classified as a category "B" operation because the construction and operation of the Margen Derecha–Villa Hayes, Valenzuela–Guarambaré, San Lorenzo–Villa Aurelia, and Barrio Molino–Villa Aurelia transmission lines are expected to generate moderate environmental and social impacts for which mitigation and compensation measures can be feasibly implemented. Disaster risk is moderate. In preparing the operation, various alternative routes for transmission lines were considered for minimizing social and environmental impacts. The selected routes cross through rural properties used

predominantly for agriculture, although they also traverse portions of natural habitats ("Wet Chaco" forestland, rivers, and wetlands) and critical natural habitats (two protected wilderness areas, an area important to birds, and portions of the Upper Paraná Atlantic Forest). The mitigation hierarchy has been used in designing the transmission lines in order to avoid and minimize impacts, and mitigation measures based on good practices in the sector will be used in executing the project to ensure that no natural habitats are significantly converted or degraded. The transmission lines do not cross through indigenous territories. An environmental and social impact assessment identified the following main impacts and risks: (i) fragmentation/impacts affecting critical habitats: deforestation of 15.06 hectares of the Upper Paraná Atlantic Forest and 17 hectares of native forestland in the Wet Chaco; (ii) natural disaster risks, primarily due to flooding, landslides, and fire; (iii) health impacts of electromagnetic fields; (iv) restrictions on the use of 1,357 rural properties that will be crossed by the transmission lines; and (v) impacts on 80 homes, five of which will need to be resettled. The risks and impacts will be managed using an environmental and social management plan that includes (i) a biodiversity plan stating that, in the Upper Paraná Atlantic Forest and other native forestlands, an effort will be made to avoid locating towers in remainder lands and that high and extra-high towers will be used to avoid or minimize the need to cut down or permanently trim forest vegetation; in addition, bird flight diverters and monitors to detect bird collisions will be installed in areas important to birds; (ii) a natural disaster management and emergency response plan, with structural and nonstructural engineering design measures for climate-change resilience and adaptation; (iii) a plan for monitoring, preventing, and managing the health impacts of electromagnetic fields; (iv) a resettlement and compensation plan specifying compensation measures for physical and/or economic displacement in accordance with operational policies OP-710 and OP-703; (v) an environmental management and occupational health and safety plan; (vi) a plan to prevent adverse gender-related impacts; and (vii) a community participation plan, including a mechanism for complaints and claims.

- 2.5 A process of meaningful consultations with stakeholders was carried out as part of project preparation. This process was threefold: (i) interviews with 476 stakeholders, including potentially affected persons, community leaders, and local authorities; (ii) meetings with institutional representatives of the environmental and health sector and with key environmental nongovernmental organizations; and (iii) five public consultations with the population potentially affected by construction and operation of the transmission lines. These public consultations were held in January 2022 using a hybrid (online/in-person) format, with the participation of 95 people in person and 14 people online. The main concerns expressed in the consultations relate to restrictions on use of the easement strip, the criteria used in calculating compensation amounts, health risks related to electromagnetic fields, inconveniences to residents during installation of underground transmission lines, and the cumulative impacts of the concentration of multiple transmission lines and other infrastructure works at certain points along the route.

### C. Other identified risks

2.6 The following medium-high risks, as detailed in Table 4, were identified:

**Table 4. Main identified risks**

Risk level	Risk category	Risk	Mitigation strategy
Medium-high	Public management and governance	Any delay in issuing the decree authorizing the negotiation and signature could result in a delay in signing contracts with entities financing the project, which in turn could cause a delay in the start of the project and programming from year 1.	Ongoing dialogue and monitoring of agreements for the analysis mission with ANDE and the Ministry of Finance, of milestones for signing of loan contracts, and ratification and fulfillment of conditions for the first disbursement.
Medium-high	Development	Climate factors, accidents, or unforeseen events may delay construction and installation of transmission lines and could impact the project schedule and critical path.	Development of a contingency plan; implementation of safety measures.

## III. ARRANGEMENTS FOR EXECUTION, MONITORING, AND EVALUATION OF RESULTS

### A. Execution arrangements

- 3.1 **Borrower, executing agency, and guarantor.** The executing agency and borrower is ANDE.<sup>48</sup> The Republic of Paraguay is the guarantor of the borrower's financial obligations (including payment of principal, interest, and other financial charges) stemming from the loan contract. ANDE—acting through the Office of Planning and Studies, which will be the project coordination unit (PCU)—will be responsible for project execution, administration, monitoring, and evaluation. The PCU will be in charge of project management, including (i) coordination of the procurement of works, goods, and services; (ii) loan disbursement requests; (iii) preparation of and updates to [annual work plans](#), the [procurement plan](#), and the [multiyear execution plan](#); (iv) submittal of project management reports; (v) assistance in supervising works and service contracts; and (vi) serving as a liaison with the Bank. Support will be provided by ANDE's Office of Public Procurement, which will be responsible for procurement processes, and ANDE's Financial Department for fund management. Before the start of the project, the Bank will support the strengthening of PCU members' capacities in current procurement policies, procedures, and documents.
- 3.2 The PCU will support the borrower's Technical Department in preparing, awarding, and executing bidding processes in coordination with the Office of Public Procurement. The PCU will support the Contract Management department for 500-kilovolt Works for technical management of the contracts after they are awarded. The Office of Environmental Management will be responsible for

<sup>48</sup> ANDE will be the counterpart for the loan contract. For any coordination during contract execution with the executive branch of the Republic of Paraguay, the sector liaison agency will be the VMME of the Ministry of Public Works and Communications.

implementation and technical supervision of environmental and social considerations.

- 3.3 **Partial exception to the Bank's policy on guarantees required from the borrower (document GP-104-2).** In the loan proposal for CCLIP PR-O0004 (see paragraph 3.4 of the loan contract), the Bank's Board of Executive Directors approved a partial exception to the Bank's policy on guarantees required from the borrower (document GP-104-2) for this second individual operation as well. Paragraph 3.4 of the loan contract for CCLIP PR-O0004 states that "this partial exception to the CCLIP policy applies to its first operation and any subsequent operations for which ANDE is the borrower." Thus, since the Bank's Board of Executive Directors approved a partial exception to the policy on guarantees required from the borrower (document GP-104-2) in approving CCLIP PR-O0004 (see paragraph 3.4 of the [loan contract](#)), the Republic of Paraguay will only guarantee ANDE's financial obligations for this second individual operation (including payment of principal, interest, and fees), not the borrower's obligations to perform. ANDE is a solvent entity with financial and management capacity to meet its obligations to the Bank.
- 3.4 **Operating Regulations ([optional link 7](#)).** The project Operating Regulations will detail the execution mechanism for the project and will include (i) procedures for procurement of works, goods, and consulting services; (ii) guidelines for use of resources and project financial management; (iii) disbursement procedures; (iv) a detailed description of project activities, as well as project monitoring; (v) structure of the PCU and duties of key personnel; (vi) coordination mechanisms between the PCU and other ANDE units related to the project; (vii) strategy for investment sustainability and responsibilities for operation and maintenance of works; and (viii) a section on the environmental and social management plan and the resettlement and compensation plan. If appropriate, the Operating Regulations will detail operational aspects of any financing from the Bank and ICDF that may be necessary in accordance with the agreement that the Bank may sign with ICDF. The Operating Regulations will include the commitments and documents mentioned in Annex B of the environmental and social management report ([required link 3](#)).
- 3.5 **Special contractual conditions precedent to the first disbursement of the loan. Prior to the first disbursement of loan proceeds for the second individual operation, ANDE will submit evidence of (i) approval and entry into force of the project Operating Regulations ([optional link 7](#)) under the terms and conditions previously agreed upon with the Bank; this is necessary because the Bank's experience in the region indicates that approval of the project Operating Regulations before the first disbursement contributes to the executing agency's internal organization for implementation of the operation; and (ii) selection or designation, as appropriate, of key complementary personnel for the project—i.e., a financial specialist and procurement specialist in the PCU, and an electrical engineer, environmental specialist, hygiene and safety specialist, and social specialist in the Office of Environmental Management; this is to provide assurance to the Bank that ANDE will have an appropriate team of professionals for project execution.**

- 3.6 **Special contractual conditions for execution.** The project will be executed in accordance with the contractual provisions on environmental, social, health, and safety matters included in Annex B of the environmental and social management report ([required link 3](#)).
- 3.7 The procurement of goods, works, and services, and the selection of consultants financed by the Bank, will be in accordance with the Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank (document GN-2349-15) and the Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (document GN-2350-15), respectively. The use of the electronic reverse auction and competitive bidding subsystems of Paraguay's public procurement system will be used in the operation under the specified terms. The procurement plan details the project's procurement processes.
- 3.8 **Direct contracting.** The operation will use direct contracting for two items: one for a goods contract, to renew the PSSE license currently used in ANDE's system. This direct contracting item is based on an existing contract and will help maintain the existing software by renewing the annual license. The contractor is Rieder SACI, and the amount of the procurement item is US\$250,000. The second direct contracting item is for a consulting firm to provide continuity to the development of ANDE's contingency management system (paragraph 1.26), which is currently in the testing phase and needs to be used in commercial operations. Direct contracting is justified in this case because the services are a natural continuation of those previously provided. The executing agency has confirmed the need to maintain continuity in the technical approach, experience, and professional responsibility with the same firm that developed the system. The contractor is Siemens, and the procurement amount is US\$1.75 million.
- 3.9 **Maintenance.** After the project is completed, ANDE will ensure effective maintenance of financed works and equipment in accordance with generally accepted technical standards to ensure sustainability. ANDE will submit to the Bank an annual maintenance report on the status of the project's works and equipment during the first quarter of each calendar year, starting in the year when the first project-financed work is concluded and up until the third year after the end of the disbursement period.
- 3.10 **Institutional capacity.** ANDE will execute the project, using its organizational structure and fiduciary management systems. Using the Institutional Capacity Assessment Platform, the Bank (i) found that ANDE has the capacity to execute the project; and (ii) identified areas to be strengthened with training in project management and fiduciary matters (new procurement policies, as set forth in documents GN-2349-15 y GN-2350-15).<sup>49</sup> The main recommendations of the strengthening plan, to be implemented to enhance ANDE's execution capacity, are as follows: (i) prepare the project Operating Regulations in accordance with the agreed conditions (paragraph 3.4); (ii) include in the PCU's organizational structure key professional positions needed to support project execution; and (iii) continuously update and execute the risk mitigation plan with semiannual reviews by the PCU.

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<sup>49</sup> The details of the strengthening plan are included in the Institutional Capacity Assessment Platform report.



**B. Arrangements for monitoring and evaluation of results**

- 3.11 **Monitoring.** Monitoring will include administration missions, semiannual reports, and annual external audits. ANDE, acting through the PCU, will monitor the project overall, using the targets in the Results Matrix as well as the annual work plan, which will be updated each year. The multiyear execution plan will include the project's complete physical and financial planning in accordance with the structure of the expected outputs according to the Results Matrix and including the budget allocated to each component. ANDE, acting through the PCU, will prepare the semiannual reports and submit them within 90 days after the last business day of each six-month period, in addition to holding meetings with the Bank to evaluate the project's progress. The Bank, acting through the Energy Division, will supervise project execution. The [monitoring and evaluation plan](#) provides further details on the monitoring arrangement.
- 3.12 The [monthly and annual assistance tool](#) will be used to monitor the operation. This tool details the activities to be carried out month by month, identifies deviations in a timely manner, and aids in evaluating the operation from eligibility to completion.
- 3.13 **Evaluation.** ANDE will submit a midterm evaluation report to the Bank within 60 days after 50% of the loan proceeds have been disbursed, if so required by the Bank, as well as a final evaluation report within 90 days after 90% of the total loan proceeds have been disbursed. Both of these reports will be financed by the loan. The terms of reference for these reports will require the Bank's prior no objection. At a minimum, in addition to what is indicated in the project Operating Regulations, these reports will include the following: (i) progress toward the targets in the Results Matrix; (ii) degree of fulfillment of environmental specifications and requirements for the works, in accordance with the environmental and social management plan and the guidelines of the environmental and social management report; (iii) degree of fulfillment of obligations set forth in the loan contract and the project Operating Regulations; (iv) effectiveness of the monitoring and evaluation system; and (v) lessons learned. At the end of the project, a project completion report will be prepared to evaluate whether the objectives were fulfilled and to glean lessons learned for future projects.
- 3.14 **Ex post evaluation.** ANDE will conduct an ex post cost-benefit analysis using up-to-date information on (i) costs of project-financed infrastructure; (ii) reduction of technical losses in the transmission system; and (iii) costs of operation and maintenance of the infrastructure. This evaluation will be submitted to the Bank within 90 days after the last disbursement and will be financed by the loan proceeds.

**IV. ELIGIBILITY CRITERIA**

- 4.1 **General eligibility criteria.** This second operation under the CCLIP satisfies all criteria set forth in paragraphs 3.5(i)-(iv), of Annex III of document GN-2246-13 and in the CCLIP operational guidelines (document OP-1622-3), as follows:
- a. Objective, sector, and components. The second operation contributes to the CCLIP's sector objective (paragraph 1.11), as it will provide continuity to the effort to make Paraguay's high-voltage transmission system more reliable and efficient.



- b. Actions to improve ANDE. This operation includes specific actions to enhance ANDE's capacities in line with the recommendations from the Institutional Capacity Assessment Platform (paragraph 3.10).

4.2 **Specific eligibility criteria for the second project under the CCLIP.** This second operation under the CCLIP satisfies the specific criteria for operations set forth in paragraph 3.5(v) of Annex III of document GN-2246-13 and in the CCLIP operational guidelines (document OP-1622-3), as follows:

- a. Institutional capacity assessment of ANDE. The key personnel in ANDE's PCU, who will be hired on a full-time basis in technical and fiduciary areas, will need to be strengthened (paragraphs 3.10 and 4.1(a)). This is deemed a crosscutting trigger of risks for the achievement of project objectives in terms of initially projected scope, time, and cost. This risk will be mitigated as described in point 4.
- b. Status of the first individual operation. The proposed law to ratify the loan contract for the first operation was submitted to Congress on 12 November 2021 and is currently in the process of being approved in the first half of 2022. The eligibility process for the first operation should be completed and the corresponding disbursements initiated by the second half of 2022. In view of the status of the first operation under CCLIP PR-O0004, a partial waiver of the CCLIP policy (document GN-2246-13) is being requested with regard to the eligibility criterion on satisfactory execution of the first operation (PR-L1173), as described in paragraph 3.5(v)(c) of the CCLIP policy (document GN-2246-13). The first operation under the CCLIP is not currently in execution, but it is in the first phase of legal eligibility and is expected to go on alert as soon as the second operation is approved, since its loan contract is in the process of being ratified by the Paraguayan Congress. It should be noted that the first and second operations under the CCLIP can be executed separately and simultaneously (paragraph 4(c)(1)). From an operational standpoint, ANDE has the institutional capacity to implement both projects in a parallel manner, and therefore the development objectives of the second individual operation are highly likely to be fulfilled.
- c. Rationale for preparation of the second operation. ANDE is prepared to execute the second operation under the CCLIP because, as indicated by the Institutional Capacity Assessment Platform, it has the financial and fiduciary capacity to execute it (paragraph 3.10). Moreover, as noted in Annex II of the CCLIP operational guidelines (document OP-1622-3), processing the second operation is appropriate and timely because:
  - 1. The second operation will finance infrastructure works in eastern Paraguay and in cities other than those included in the first operation, which will not preclude the parallel development of infrastructure. ANDE, as the executing agency, will conduct competitive international bidding processes, which will ensure that contracts are awarded for execution of works on a parallel basis, if necessary.
  - 2. ANDE is currently executing two Bank-financed operations, with satisfactory performance in both cases, including social and environmental considerations: National Electricity Administration Multiphase Power

Transmission Program (loan 2891/OC-PR; PR-L1058) and the Rehabilitation and Modernization Program for the Acaray Hydroelectric Power Plant (loan 4690/OC-PR; PR-L1156).

3. The ANDE Master Plan 2021-2030 includes strategic national works in transmission. The first and second operations under the CCLIP provide resources to carry out the master plan (paragraph 1.7), which will help ANDE to secure investments to ensure the quality of electricity service, in accordance with the “appropriate and sustainable habitat” focus area of the Paraguayan government’s 2030 plan.
4. The second individual operation under the CCLIP complements the objectives of the first operation, as both include works identified as strategic priorities for the country.

Development Effectiveness Matrix		
Summary		PR-L1183
<b>I. Corporate and Country Priorities</b>		
<b>Section 1. IDB Group Strategic Priorities and CRF Indicators</b>		
1. The Strategic Alignment tab in convergence shows alignment on IDB Group Strategic Priorities. The Results Matrix tab lists flagged CRF indicators		
2. The Strategic Alignment tab in convergence shows information on alignment to Country Development Objectives		
<b>II. Development Outcomes - Evaluability</b>		<b>Evaluable</b>
3. Evidence-based Assessment & Solution		9.0
3.1 Program Diagnosis		1.9
3.2 Proposed Interventions or Solutions		3.2
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		9.5
5.1 Monitoring Mechanisms		4.0
5.2 Evaluation Plan		5.5
<b>III. Risks &amp; Mitigation Monitoring Matrix</b>		
6. Overall risks rate = magnitude of risks*likelihood		Medium High
The Environmental and Social Data tab in convergence shows the environmental and social risk classification of the project		
<b>IV. IDB's Role - Additionality</b>		
Annex III Fiduciary Arrangements describes project reliance on the use of country systems (VPC/FMP Criteria)		
7. 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	ATN/OC-19107-PR

**Evaluability Assessment Note:** The general objective of this operation is to contribute to the economic development of the country through a sustainable, reliable and efficient electricity supply. The specific objectives are: (i) to support improvements in the reliability and efficiency of the high-voltage transmission system; and (ii) promote the optimization of the transmission system through technological updating.

In general, the diagnosis is adequate, with a well-identified problem and clear determinants. The results matrix exhibits a vertical logic with clear specific objectives and SMART result indicators that allow demonstrating compliance. The economic analysis consisted of estimating the benefits of the program through a Cost Benefit Analysis (CBA) for Components 1 and 2.

The program has a Monitoring and Evaluation Plan that specifies: (i) the evaluation questions; (ii) the methodologies for measuring the indicators; (iii) data requirements; and (iv) those responsible, as well as the estimated budget. A reflexive evaluation is proposed to evaluate the effect of the investments, in the CO2 equivalent emissions, the reliability and efficiency of the system, its response capacity and the gender equality within the electricity authority (ANDE).

## RESULTS MATRIX

<b>Project objective:</b>	The general objective of the second operation is to contribute to economic development in Paraguay through a reliable and efficient supply of electricity. The specific objectives are: (i) to help make the high-voltage transmission system more reliable and efficient; (ii) to help optimize the transmission system through technological upgrades; and (iii) to support the sustainable development of Paraguay's electricity sector through gender equity and diversity.
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### GENERAL DEVELOPMENT OBJECTIVE

Indicators	Unit of measure	Baseline	Baseline year	Expected year achieved	Target	Means of verification	Comments
General development objective: To contribute to Paraguay's economic development through sustainable, reliable, and efficient electricity supply							
CO <sub>2</sub> equivalent emissions averted	Tons of CO <sub>2</sub> equivalent	0	2020	2026	681,624	Reports from ANDE technical management	Reducing system losses will aid in exporting clean energy and displacing higher-carbon-emission generation in neighboring countries.

### SPECIFIC DEVELOPMENT OBJECTIVES

Indicators	Unit of measure	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Means of verification	Comments
Specific objective 1: To help make the high-voltage transmission system more reliable and efficient												
Unsupplied energy expectation differential	MWh/year	0	2020	0	91	399	6,696	49,624	53,257	53,257	Reports of ANDE Technical Department	Difference in unsupplied energy due to out-of-service transmission lines in scenarios with and without the project.
Energy losses in transmission system	%	5.6	2020	5.6	5.7	5.6	4.3	4.5	4.1	4.1	Reports of ANDE Technical Department	Losses in transmission system measured as the ratio of (a) the difference between electricity entering the system and electricity leaving the substations and (b) electricity entering the system.
Specific objective 2: To help optimize the transmission system through technological upgrades.												
Response capacity for synchronized operation <sup>1</sup>	Minutes	90	2020	90	90	90	0.003	0.003	0.003	0.003	Report of the Planning Division	Reduced man-hours to transfer load between plants

<sup>1</sup> ANDE's contingency management system allows for synchronized, interconnected operation between Itaipú and Yacyretá, thereby averting the need to cut power in order to transfer loads manually.

Indicators	Unit of measure	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Means of verification	Comments
Specific objective 3: To support the sustainable development of Paraguay's electricity sector through gender equity and diversity.												
Percentage of women in leadership positions	%	20%	2018	20%	20%	22%	22%	22%	25%	25%	Reports of the Gender Committee	

#### OUTPUTS

Indicators	Unit of measure	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Means of verification	Comments
Component I. Investments in high-voltage transmission lines												
Output 1. 369.5-km Margen Derecha–Villa Hayes 500-kV transmission line	Kilometers	0	2021	0	73.9	147.8	147.8	0	0	369.50	ANDE works progress reports	
Output 2. Villa Hayes substation expanded with 1 complete line-in position for 500-kV transmission line	Position	0	2021	0	0	0	1	0	0	1	ANDE works progress reports	
Output 3. Margen Derecha IPU substation expanded with line-out position for second Margen Derecha–Villa Hayes 500-kV line	Position	0	2021	0	0	0	1	0	0	1	ANDE works progress reports	
Output 4. 60-km Valenzuela–Guarambaré double-circuit 220-kV transmission line	Kilometers	0	2021	12	24	24	0	0	0	60	ANDE works progress reports	
Output 5. Rehabilitation of existing 30-km segment of the San Patricio–Guarambaré 220-kV transmission line	Kilometers	0	2021	6	12	12	0	0	0	30	ANDE works progress reports	
Output 6. Modernization of monitoring and control system of Paraguay's National Interconnected System (contingency management system)	Modules	0	2021	0	0	0	2	0	0	2	Reports from ANDE Technical Department	

Indicators	Unit of measure	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of project	Means of verification	Comments
Output 7. Gender action plan implemented in ANDE	% of plan actions implemented	5%	2021	0	8%	8%	8%	8%	8%	40% (100% of all activity is in the plan)	Gender Committee reports. As part of operation PR-L1173, 60% of the action plan will be carried out, and 100% of it will be completed by implementing this operation.	100% of actions will be completed through these activities; 60% will be completed under PR-L1173.
Output 8. Implementation of guidelines on inclusive services for people with disabilities	% of actions in the guidelines implemented	0	2021	0	6%	6%	6%	6%	6%	30%	ANDE management reports	The first part of implementation (30%) includes actions that may require adjustments to infrastructure and content, which means that will take longer.
Component 2. Investments in underground transmission lines												
Output 9. San Lorenzo–Villa Aurelia 220-kV underground transmission line (9 km)	Kilometers	0	2021	0	1.80	3.60	3.60	0	0	9	ANDE works progress reports	
Output 10. Positions of 220-kV transmission lines for San Lorenzo and Villa Aurelia substations	Position	0	2021	0	0	0	1	0	0	1	ANDE works progress reports	
Output 11. Barrio Molino–Villa Aurelia 220-kV underground transmission line (8 km)	Kilometers	0	2021	0	1.60	3.20	3.20	0	0	8	ANDE works progress reports	
Output 12. Positions on the 220-kV transmission line of the Barrio Molino and Villa Aurelia substations	Position	0	2021	0	0	0	1	0	0	1	ANDE works progress reports	
Output 13. Upgrading of static VAR compensator with a capacity of –150 / +250 MVar for the Limpio substation (retrofit)	Global	0	2021	0	0	0	1	0	0	1	Reports from ANDE Technical Department	

**Country:** Paraguay      **Division:** ENE      **Operation number:** PR-L1183      **Year:** 2022

## FIDUCIARY AGREEMENTS AND REQUIREMENTS

**Executing agency:** National Electricity Administration (ANDE)

**Name:** Expansion of the High-voltage Transmission System—Phase II

### I. Fiduciary Context of the Executing Agency

1. Use of country systems in the operation (any subsequently approved system or subsystem may be applicable to the operation, in accordance with the terms of the Bank's validation).

<input checked="" type="checkbox"/> Budget	<input type="checkbox"/> Reports	<input checked="" type="checkbox"/> Information system	<input type="checkbox"/> National competitive bidding
<input checked="" type="checkbox"/> Treasury	<input type="checkbox"/> Internal audit	<input checked="" type="checkbox"/> Shopping	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> Accounting	<input type="checkbox"/> External control	<input type="checkbox"/> Individual consultants	<input type="checkbox"/> Other

### 2. Fiduciary execution mechanism

<input checked="" type="checkbox"/>	Cofinancing	The program is cofinanced by the International Cooperation Development Fund of Chinese Taipei (ICDF).
<input checked="" type="checkbox"/>	Details of fiduciary execution	The executing agency is ANDE, acting through the Office of Planning and Studies, under which the project coordination unit (PCU) will be formed. The PCU will assign personnel to the team to manage the project on a full-time basis.

### 3. Fiduciary capacity

Fiduciary capacity of the executing agency	<p>ANDE will execute the project using its organizational structure and fiduciary management systems. The Bank conducted an assessment using the Institutional Capacity Assessment Platform in 2021, which indicated satisfactory development, while the risk matrix indicates a medium-low risk level. The structure and execution system will be maintained for this operation, and therefore the executing agency's fiduciary risk is deemed to be low.</p> <p>While the executing agency has trained personnel, they will not be assigned to the project on a full-time basis, and therefore this unit will need to be strengthened for its key personnel, who will be hired on a full-time basis in technical and fiduciary areas. This is considered a crosscutting trigger of risks in terms of initially projected scope, time, and costs (quality). This risk will be mitigated as described in section 4.</p>
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#### 4. Fiduciary risks and risk response

Area (financial/ procurement management)	Risk	Risk level	Risk response
Select areas	The following were identified on a preliminary basis as medium-high fiduciary risks related to human resources: (i) if, within the first 3 months of program execution, there is no procurement specialist in place who is knowledgeable of Bank policies and experienced in projects, procurement processes and programming in year 1 will be delayed; and (ii) if, within the first 3 months of program execution, there is no financial specialist in place who is knowledgeable of the Bank's financial guidelines and experienced in projects, delays and/or errors will occur in the use of funds and related accounting, which may result in ineligible expenses and incorrect decisions due to erroneous financial reports.	Select responsible party	Have in place the support of a procurement specialist and a financial specialist as members of the PCU.
Select areas	According to the 2021 Institutional Capacity Assessment Platform, the executing agency has shown weaknesses in past performance in terms of duration of procurement processes.	Select responsible party	This risk will be mitigated by (1) providing training related to the new procurement policies; (2) including in the project Operating Regulations a description of the various types of procurement processes with estimated time periods, with approvals by resolution; (3) monitoring the program timetable, for which the project will have an operations analyst; (4) including in the Office of Public Procurement a qualified professional assigned full-time to address the project's specific demands.



Select areas	Identify basic responsibilities and activities of the PCU and the roles of other units involved in processes, in order to mitigate the risk of delays and overlapping of responsibilities.	Select responsible party	Define roles and responsibilities in the project Operating Regulations.
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5. Policies and guidelines applicable to the operation: Financial: document GN-2811-1 (document OP-273-12). Procurement: documents GN-2349-15 and GN-2350-15; in both cases, as amended.

6. Exceptions to policies and guidelines: Not applicable.

## II. Considerations for the Special Provisions of the Loan Contract

Special contractual conditions precedent to the first disbursement: (i) formation of the PCU, with the aforementioned members designated and/or hired; and (ii) approval and entry into force of the project Operating Regulations under the terms previously agreed upon with the Bank.
Special contractual conditions for execution. The project will be executed in accordance with the contractual provisions on environmental, social, health, and safety matters included in Annex B of the environmental and social management report ( <a href="#">required link 3</a> ).
For the purposes of Article 4.10 of the General Conditions, the parties agree that the applicable exchange rate will be the rate specified in paragraph (b)(i) of Article 4.10. The agreed exchange rate will be the rate in effect on the date on which the approval currency or the disbursement currency is converted to the local currency of the borrower's country. To determine the equivalence of expenses incurred in local currency as a charge against the local contribution, the agreed exchange rate will be the rate at the time of the payment in which ANDE or any other person or entity authorized to make expenditures makes the applicable payments to the contractor, provider, or beneficiary. To determine the equivalence of the reimbursement of expenditures against the loan, the agreed exchange rate will be the rate in effect on the date of the reimbursement request.
The PCU will submit the annual financial statements, with specific terms of reference acceptable to the Bank, within 120 days after the close of each fiscal year. The final audit report will be submitted within 120 days after the end of the current disbursement period.

## III. Agreements and Requirements for Procurement Execution

<input checked="" type="checkbox"/>	Bidding documents	Contracts for works, goods, and nonconsulting services procured in accordance with the Bank's procurement policies (document GN-2349-15) and subject to international competitive bidding (ICB) will be carried out using Bank-issued standard bidding documents. Similarly, contracts for consulting services will be procured in accordance with the policies for selection of consultants (document GN-2350-15), using the standard request for proposals issued by the Bank. Procurement processes under the thresholds for national bidding will use documents agreed upon between the Office of Public Procurement and the Bank. The project's sector specialist will review the technical specifications and terms of reference for procurement processes during preparation of selection processes. This technical review may be performed on an ex ante basis and is unrelated to the procurement review method.
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☒	Use of country systems	Electronic reverse auction and competitive bidding will be used in procuring common goods and simple works in accordance with the approval of the Bank's Board of Executive Directors. The operation's procurement plan will indicate which procurement processes are to be executed through the country system. If the Board of Executive Directors extends the scope of its approval for use of the country system, it will be applicable to the operation.
☒	Direct contracting and single-source selection	<p>The following direct contracting and single-source selection procurement items have been identified:</p> <p>Renewal and maintenance of the PSSE license (includes maintenance).</p> <p>Contractor: Rieder SACI</p> <p>Amount: US\$250,000</p> <p>Procurement history: License secured through direct contracting, financed through IDB loan 1835-OC/PR, "Multiphase Power Transmission Program—Phase I" (no objection CPR/C/2015/956, 28 May 2015), justified by paragraph 3.6(c) of document GN-2349-9: "The required equipment is proprietary and obtainable only from one source."</p> <p>Technical justification: Direct contracting is being used to update the existing software by renewing the license, as this must be updated every year. This software is critical to evaluating, analyzing, and subsequently making decisions on the study of ANDE's electrical grid as well as the regional system, as it assists in reading data from the National Interconnected System and the Yacyretá hydropower plant (Paraguayan and Argentine systems), which are mutually dependent, thus providing significant versatility.</p> <p>Policy justification: Paragraph 3.7(b) standardization of goods for compatibility purposes, and paragraph 3.7(c) the requirement equipment is proprietary and obtainable from only one source, from document GN-2349-15. In the context of the sector, the price is considered reasonable, and no other brands or sources will be used.</p> <p>The procurement process for a consulting firm to update Paraguay's National Interconnected System (ANDE's contingency management system) includes training.</p> <p>Contractor: Siemens Co.</p> <p>Amount: US\$1,750,000</p> <p>Procurement history: Through an addendum to international competitive bidding contract 1045/2014, the project to expand the Ayolas and Villa Hayes 500-kV substations, financed through loan contract 2891/OC-PR. To this end, quotes were requested from Siemens, ABB, CIE, and GRID Solutions, and the proposal from Siemens was determined to be the most cost-effective.</p>

		<p>Technical justification: ANDE's contingency management system uses power outages on a contingency basis for ANDE's electrical grid. It is operational and performing well at this time, but it is still in the testing phase and is slated for use in commercial settings. However, it relies on completion of the 500-kV Valenzuela substation (associated with expansion of the contingency management system), for which construction is now under way.</p> <p>Policy justification: Paragraph 3.11(a) of document GN-2350-15: services that represent a natural continuation of services previously performed by the firm. The executing agency has confirmed the need to maintain continuity in the technical approach, experience, and professional responsibility with the same firm that developed the system. In the context of the sector, the price is considered reasonable.</p>								
<input checked="" type="checkbox"/>	Procurement supervision	<p>At the request of the Ministry of Finance, ex ante supervision will be used. Procurement processes that use the country system will be supervised using the country system for supervision. The supervision method will be determined for each selection process. The thresholds for international competitive bidding are as follows:</p> <table><tr><td></td><td>Works</td><td>Goods/services</td><td>Consulting services</td></tr><tr><td></td><td>US\$5,000,000</td><td>US\$500,000</td><td>US\$200,000</td></tr></table>		Works	Goods/services	Consulting services		US\$5,000,000	US\$500,000	US\$200,000
	Works	Goods/services	Consulting services							
	US\$5,000,000	US\$500,000	US\$200,000							
<input checked="" type="checkbox"/>	Records and files	<p>The executing agency will maintain filing systems with complete, orderly documentation of procurement processes at all phases before, during, and after the contracts. Documents will be maintained in accordance with the Bank's procurement policies.</p>								

#### Main procurement items

Description	Selection method	New procedures/ tools	Estimated date	Estimated amount (US\$)
<b>Goods</b>				
Renewal and maintenance of PSSE license (includes maintenance)	Direct contracting		05/03/2024	250,000.00
Limpio substation: Modernization of the static VAR compensator	International competitive bidding		02/13/2023	7,444,780.00

Description	Selection method	New procedures/ tools	Estimated date	Estimated amount (US\$)
<b>Works</b>				
Construction of 369.5 km of Margen Derecha–Villa Hayes transmission line, Villa Hayes substation; 1 complete line-in position for 500-kV transmission line; expansion of Margen Derecha IPU substation; construction of line-out position of second Margen Derecha–Villa Hayes 500-kV line	International competitive bidding		03/15/23	215,347,785.00
Construction of 60 km of Valenzuela–Guarambaré 220-kV double-circuit transmission line	International competitive bidding		02/13/2023	35,999,924.00
<b>Nonconsulting services</b>				
<b>Consulting firms</b>				
Hiring of firms to update Paraguay's National Interconnected System (ANDE's contingency management system), including training	Single-source selection		02/16/2024	1,750,000.00
Contracting of supervision of construction of 369.5 km Margen Derecha–Villa Hayes transmission line, Villa Hayes substation; 1 complete line-in position for 500-kV transmission line; expansion of the Margen Derecha IPU substation; construction of line-out position for second Margen Derecha–Villa Hayes 500-kV line	Quality- and cost-based selection (QCBS)		02/13/2023	10,627,146.75

Description	Selection method	New procedures/ tools	Estimated date	Estimated amount (US\$)
Contracting of consulting firm to implement a digital system for system control and management	Quality- and cost-based selection (QCBS)		02/16/2024	2,000,000.00
Contracting of supervision of work for 60-km Valenzuela–Guarambaré double-circuit 220-kV transmission line	Quality- and cost-based selection (QCBS)		02/13/2023	1,770,488.50
<b>Individuals</b>				
Operations analyst	3 curricula vitae		12/19/2023	360,000.00
Electricity specialist	3 curricula vitae		12/19/2023	240,000.00
Fiduciary specialist	3 curricula vitae		12/19/2023	240,000.00
Environmental specialist	3 curricula vitae		12/19/2023	120,000.00

[To view the procurement plan](#)

#### IV. Financial Management Agreements and Requirements

<input checked="" type="checkbox"/>	Programming and budget	The Office of Planning and Studies, under the Office of the President of ANDE—in its capacity as PCU, acting through its units and in coordination with other management units—will be in charge of planning financial resources for the project. ANDE will carry out programming, administration, and execution of budgetary resources for the project, using results-based budgeting.
<input checked="" type="checkbox"/>	Treasury and disbursement management	Disbursements will be made in the form of advances of funds, to be corroborated by submitting a detailed financial plan each month for a period of up to six months as well as a long-term financial plan, so that the program's actual needs may be determined in view of the multiyear execution plan, the annual work plan, and the procurement plan. Subsequent disbursements will be subject to justification of at least 80% of previous advances of funds. A special bank account exclusively for the program will be used for each source of financing. Disbursements will be made manually, and U.S. dollars will be the currency to be used in managing the operation.

		The exchange rate will be as specified in Section II, unless otherwise determined by the borrower during negotiation of the loan.
<input checked="" type="checkbox"/>	Accounting, information systems, and reporting	Paraguay maintains its accounts on an accrual basis but uses cash accounting on IDB-financed projects. ANDE has an accounting system with various integrated modules: accounting, fixed assets, accounts payable, treasury, purchasing, and inventory. ANDE is fully in the process of implementing SAP, which will support all financial and logistical processes in an integrated manner. The project Operating Regulations will be used with the documented definition of work flows and internal controls.
<input checked="" type="checkbox"/>	Internal control and internal audit	For internal control, the report for fiscal year 2020 from the Internal Control System Effectiveness Evaluation, pursuant to the Minimum Requirements Policy (MECIP 2015), showed a score of “designed high” indicating a properly defined internal control system. Controls are executed as planned, and there is a certain discipline about them. This assessment indicates a medium performance level, as published on the website of the Office of the Comptroller General. This assessment was also validated by the Office of the Auditor General of the Executive Branch, which is the technical-regulatory and oversight body for entities of the executive branch.
<input checked="" type="checkbox"/>	External control and financial reports	The executing agency will select and contract external audit services in accordance with the terms of reference previously agreed upon with the Bank. These terms of reference will specify the type of review, timing, and scope. The executing agency will submit the program’s annual audited financial statements, including the statement of cash received and disbursements issued, statement of cumulative investments, notes on financial statements, and statement of project management (executing agency). It will include the evaluation of the internal control system. An eligible or eligible-plus independent audit firm will be selected, the cost of which will be covered by loan proceeds. The selected external auditor and the audit rules to be used will be acceptable to the Bank. The cutoff date will be 31 December, and the submittal deadline will be 120 days after 31 December.
<input checked="" type="checkbox"/>	Financial supervision of the operation	At a minimum, an annual onsite review and “desk” reviews will be carried out. The auditor will verify that resources are executed in accordance with Bank rules and policies on fiduciary matters and in accordance with the project Operating Regulations. The fiduciary supervision visits for financial management will include verification of fiduciary arrangements for project administration, as well as monitoring of implementation of recommendations issued by the independent audit firm as applicable.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-\_\_\_/22

Paraguay. Loan \_\_\_\_/OC-PR to the a la Administración Nacional de Electricidad (ANDE).  
Expansion of the High-voltage Transmission System – Phase II. Second  
Individual Operation under Conditional Credit Line for  
Investment Projects (CCLIP) PR-O0004

The Board of Executive Directors

RESOLVES:

1. 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 the Administración Nacional de Electricidad (ANDE), as borrower, and with the Republic of Paraguay, as guarantor, for the purpose of granting the former a financing aimed at cooperating in the execution of the program Expansion of the High-voltage Transmission System – Phase II, which constitutes the second individual operation under the Conditional Credit Line for Investment Projects (CCLIP) PR-O0004, approved by Resolution DE-38/20 on May 6<sup>th</sup> of 2020. Such financing will be for the amount of up to US\$260,000,000, 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.

2. To authorize the President of the Bank, or such representative as he shall designate, to distribute the administrative fees received by the Bank among the relevant departments for which additional workload is generated by the Coordination Agreement to be signed between the Bank and the International Cooperation and Development Fund of Chinese Taipei<sup>1</sup> in the context of the program as referred to in paragraph 1 of this Resolution.

(Adopted on \_\_\_\_\_ 2022)

LEG/SGO/CSC/EZSHARE-746870777-13052  
PR-L1183

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<sup>1</sup> Use of the phrase 'Chinese Taipei' does not in any way reflect the position of the IDB Group or any of its member countries regarding issues of national sovereignty or diplomatic recognition.