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ECUADOR

SUPPORT FOR THE ENERGY TRANSITION AND THE PROMOTION OF INVESTMENTS IN ECUADOR'S ENERGY SECTOR II

(EC-L1293)

LOAN PROPOSAL

This document was prepared by the project team consisting of José Ramón Gómez (INE/ENE), Project Team Leader; Roberto Esmeral (CSD/CCS) and María Julia Molina (INE/ENE), Alternate Project Team Leaders; Lenin Balza, Juan Paredes, Jorge Malpartida, Luz Caballero, Óscar Álvarez, and José Eguiguren (INE/ENE); Jean Pol Armijos (INE/TSP); Daniel Hincapie and Adam Mehl (CSD/ACU); Joan Prats (IFD/CMF); Rafael Matas (INO/IEN); Monserrat Bustelo and Agustina Suaya (SCL/GDI); Krysia Avila and Javier Jiménez (LEG/SGO); Mylena Cárdenas and Roberto Laguado (VPC/FMP); and Wladimir Zanoni and Anastassia Andrade (CAN/CEC).

CONTENTS

ANNEXES	
Annex I	Summary Development Effectiveness Matrix
Annex II	Policy Matrix
Annex III	Results Matrix

LINKS

REQUIRED:

1. Policy letter
2. Means of verification matrix
3. IDB's value added
4. Monitoring and evaluation plan

OPTIONAL:

1. Comparative matrix of changes in the policy conditions
2. Analysis of climate change and alignment with the Paris Agreement
3. Analysis of compliance with the Public Utilities Policy
4. Private sector participation and employment in Ecuador's energy transition
5. Analysis of gender and disability in the electricity sector
6. Analysis of energy subsidies in Ecuador
7. IDB support for Ecuador
8. Theory of change
9. Bibliography

ABBREVIATIONS

ARCONEL	Agencia de Regulación y Control de Electricidad (Electricity Regulation and Control Agency)
CENACE	Centro Nacional de Control de Energía (National Energy Control Center)
CO2	Carbon dioxide
FERUM	Fondo Electrificación Rural y Urbano Marginal (Fund for the Electrification of Rural and Marginalized Urban Areas)
GWh	Gigawatt-hour
IMF	International Monetary Fund
KIF	Korea Infrastructure Development Cofinancing Facility for Latin America and the Caribbean
kV	Kilovolt
LOCE	Energy Competitiveness Act
LOEE	Energy Efficiency Act
LOSPEE	Public Electricity Service Act
MEF	Ministry of Economy and Finance
MEM	Ministry of Energy and Mines
MW	Megawatt
N/A	Not applicable/no data
NDCs	Nationally Determined Contributions
PBP	Programmatic policy-based loan
SDGs	Sustainable Development Goals
SINEA	Sistema de Interconexión Eléctrica Andina (Andean Electrical Interconnection System)
SNI	Sistema Nacional Interconectado (National Interconnected System)
SOFR	Secured Overnight Financing Rate
VEER	Office of the Deputy Minister for Electricity and Renewable Energy

EXECUTIVE SUMMARY

ECUADOR
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<table>
<tr><th colspan="6">Financial Terms and Conditions</th></tr>
<tr><td colspan="3">Borrower</td><td colspan="2">Flexible Financing Facility[a]</td><td>KIF[b]</td></tr>
<tr><td colspan="3">Republic of Ecuador</td><td colspan="2">Amortization period:</td><td>15 years</td></tr>
<tr><td colspan="3">Executing agency</td><td colspan="2">Disbursement period:</td><td>1 year</td></tr>
<tr><td colspan="3">Ministry of Economy and Finance</td><td colspan="2">Grace period:</td><td>3 years</td></tr>
<tr><td rowspan="2">Source</td><td>Amount (US$ millions)</td><td rowspan="2">%</td><td colspan="2">Interest rate:</td><td>2.5%</td></tr>
<tr><td></td><td colspan="2">Credit fee:</td><td>N/A</td></tr>
<tr><td>IDB (Ordinary Capital):</td><td>500</td><td>83.33</td><td colspan="2">Inspection and supervision fee:</td><td>N/A</td></tr>
<tr><td>Cofinancing (KIF):</td><td>100</td><td>16.67</td><td colspan="2">Front-end fee:</td><td>0.1%</td></tr>
<tr><td>Total:</td><td>600</td><td>100.00</td><td colspan="2">Weighted average life:</td><td>N/A</td></tr>
<tr><td colspan="3"></td><td colspan="2">Approval currency:</td><td>U.S. dollar</td></tr>
<tr><th colspan="6">Program at a Glance</th></tr>
<tr><td colspan="6">Program objective/description. The program's general objective is to support the Ecuadorian government's efforts toward a just energy transition by fostering public and private investment. Its specific objectives are to: (i) support the decarbonization of the energy sector by promoting nonconventional renewable energy sources, new alternative generation sources, energy efficiency and demand management measures, regional integration, and e-mobility; (ii) increase private sector participation in electricity service delivery; (iii) make strides toward universal access to electricity; and (iv) reduce gender and disability gaps in the electricity sector. This operation is the second in a programmatic policy-based series consisting of two contractually independent but technically linked loans (paragraphs 1.51 and 2.1).</td></tr>
<tr><td colspan="6">Special contractual conditions precedent to the sole disbursement of the loan. The sole disbursement of resources will be contingent upon the fulfillment of the policy reform conditions as set out in the policy matrix (Annex II) and the other conditions established in the loan contract (paragraph 3.2).</td></tr>
<tr><td colspan="6">Exceptions to Bank policy. None.</td></tr>
<tr><th colspan="6">Strategic Alignment</th></tr>
<tr><td>Objectives:[e]</td><td colspan="2">O1 ☒</td><td colspan="2">O2 ☒</td><td colspan="2">O3 ☒</td></tr>
<tr><td>Operational Focus Areas:[f]</td><td>OF1 ☒</td><td>OF2-G ☒
OF2-D ☒</td><td>OF3 ☒</td><td>OF4 ☒</td><td>OF5 ☒</td><td>OF6 ☒</td><td>OF7 ☒</td></tr>
</table>

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

[b] These funds will be administered by the Bank under the Korea Infrastructure Development Cofinancing Facility for Latin America and the Caribbean (KIF), pursuant to the agreement signed between the Government of the Republic of Korea and the Bank on 28 March 2015 and most recently amended on 26 August 2021 to increase the facility's resources.

[c] 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.

[d] The credit fee and the 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.

[e] O1 (Reduce poverty and inequality); O2 (Address climate change); and O3 (Bolster sustainable regional growth).

[f] OF1 (Biodiversity, natural capital, and climate action); OF2-G (Gender equality); OF2-D (Inclusion of diverse population groups); OF3 (Institutional capacity, rule of law, and citizen security); OF4 (Social protection and human capital development); OF5 (Sustainable, resilient, and inclusive infrastructure with an emphasis on regional integration); OF6 (Productive development and innovation through the private sector); and OF7 (Regional integration).

I. DESCRIPTION AND RESULTS MONITORING

A. Background, problem addressed, and rationale

1.1 **Macroeconomic context of the country.** Ecuador's real gross domestic product (GDP) grew by 9.8% in 2021, 6.2% in 2022, and 2.4% in 2023, according to Central Bank of Ecuador data. The Central Bank of Ecuador and the International Monetary Fund project GDP growth of 0.1% for 2024. The public debt-to-GDP ratio decreased in 2023 to 55.3%, compared to 57% in 2022. Between December 2022 and December 2023, unemployment rose slightly, from 3.8% to 3.9%, and so did the poverty rate, from 25.2% to 26%. At year-end 2023, Ecuador was facing fiscal difficulties, with an overall deficit of 2.6% of GDP. Against this backdrop, the government administration elected in October 2023, which will be in office through May 2025, increased the value-added tax (from 12% to 15%) and the foreign currency outflow tax, and implemented temporary revenue measures and fiscal incentives to stimulate growth. By leveraging these measures, the Ecuadorian government was able to obtain a new US$4 billion Extended Fund Facility arrangement with the International Monetary Fund (IMF).[1] This arrangement seeks a balanced fiscal consolidation, an expansion of the social safety net, and the implementation of structural reforms. It focuses on mobilizing nonoil revenue and gradually reducing subsidies on fossil fuels, which was initiated by Executive Decree 308 of June 2024.[2] The arrangement highlights the Ecuadorian government's efforts to promote greater private sector participation in the energy transition[3] and the progress made on reforms of energy subsidies. Under the arrangement, the closing of the fiscal gap and a return to long-term growth of 2.5% are expected by 2028. Ecuador is expected to regain access to international private debt-financing markets in 2025.

1.2 **Institutional framework of the electricity sector.** The institutional framework and operation of the public electricity service is governed by the Constitution and by the Public Electricity Service Act (LOSPEE, approved on 16 January 2015) and its amendments of 21 June 2019 and 6 May 2021, and by the Energy Competitiveness Act (LOCE, approved on 11 January 2024). The sector is led by the Ministry of Energy and Mines (MEM), which establishes policies and grants licenses to service providers, promoting renewable energy and energy efficiency.

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1 The World Bank is providing technical advisory services for the plan to reduce subsidies.

2 The Ecuadorian government established the Energy Optimization Committee to propose policies designed to stabilize the price of fossil fuels, such as gas and diesel. In line with this objective, the government has begun reducing fuel subsidies. On 26 June 2024, a new price for extra and "ecopaís" gasoline in the automotive segment was made official, increasing from US$2.46 to US$2.72 per gallon, effective as of 28 June 2024. Moreover, as of 12 July 2024, the government will implement a monthly price stabilization arrangement for gasoline, adjusted in accordance to the international oil market, with increases capped at 5% and minimum reductions at 10%. This arrangement will include a compensation mechanism for taxi cab drivers and truckers. This measure marks the first step in the process of dismantling fossil fuel subsidies, which is necessary to meet the 2025 fiscal targets agreed on in the arrangement with the IMF, especially the significant adjustment required in the price of diesel.

3 The arrangement states that the Ecuadorian government has implemented reforms to create a private market in the energy sector, approving the LOCE to enable private sector participation in electricity generation and transmission with the objective of guaranteeing the power supply. In addition, the country has electricity generation projects from nonconventional renewable energy sources, such as solar and wind.

The Electricity Regulation and Control Agency (ARCONEL), attached to the MEM, regulates and oversees the sector. National electricity operator CENACE, pursuant to regulation, operates the National Interconnected System (SNI) to ensure a continuous supply of power at the minimum cost, thus maintaining the system's safety and quality. State-owned enterprises such as CELEC EP and CNEL EP, together with electricity distribution companies, ensure the generation, transmission, distribution, and sales of electricity, including decentralized and private stakeholders in self-generation and distributed power.[4]

1.3 CENACE operates and administers the technical and commercial operations of the SNI, managing the economic dispatch, compensation, and payments among companies, including international exchanges with Colombia and Peru. According to Article 49 of the LOSPEE, all energy trading, as well as short-term transactions, are settled by CENACE pursuant to regulations. These transactions include regulated contracts, bilateral contracts, nonconventional energy generation, supplementary services, and international exchanges, involving generators, self-generators, transmission entities, distributors, large consumers, and international interconnections.

1.4 **The electricity sector's energy transition plan.** Ecuador has been promoting a transformation of the electricity sector in line with the Sustainable Development Goals (SDGs) and the United Nations 2030 Agenda.[5] The government ratified this commitment in Executive Decree 371 of 2018,[6] which states that implementation of the 2030 Agenda for Sustainable Development is public policy. Under the framework of the Paris Agreement and the United Nations Framework Convention on Climate Change, the country submitted its first nationally determined contribution (NDC)[7] in 2019. The NDC outlines the measures and actions that Ecuador, given its resources and capacity, will implement to achieve a 9% reduction in greenhouse gas emissions of the energy sector by 2025, as measured against a business-as-usual scenario.[8] The NDC's three lines of action for the energy sector are to: (i) promote the use of nonconventional renewable energy;[9] (ii) enhance energy efficiency and changes in consumer behavior; and (iii) promote and implement sustainable mobility. Its crosscutting themes include the need to reduce gender gaps and lessen the impact of adaptation on highest-needs groups. As part of these lines of action for the sector, Ecuador set the following national mitigation targets: (a) increase installed capacity from renewable energy sources from 65.4% in 2023[10] to 90% by 2030; (b) increase electricity coverage from 97.43% in 2023 to 97.64% in 2032;[11] and (c) increase fuel

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4 In 2023, 90% of the electricity produced in the country under the SNI was generated by power plants of State-owned enterprises. CENACE Annual Report 2023.

5 Sustainable Development Goals.

6 Optional link 9 [1].

7 Optional link 9 [2].

8 Optional link 9 [3].

9 Defined by the regulatory agency as a plant that uses renewable energy resources such as sunlight (photovoltaic, solar thermal), wind (eolian), water (small hydroelectric plants), earth (geothermal), biomass, biogas, waves, tides, hot rocks, and dry rocks. Although these do not yet compete against conventional sources, they do have a lower environmental impact.

10 Optional link 9 [4].

11 Optional link 9 [5].

economy, optimizing electric power generation and energy efficiency. The analysis of climate change and Paris alignment (optional link 2) reviews the country's and the operation's alignment with the Paris Agreement mitigation targets (paragraph 1.47).

1.5 The government's commitment to a just and inclusive energy transition is reflected as a State policy in national development plans. The Ecuadorian government's National Development Plan, "Creating Opportunities 2021-2025,"[12] in place during the previous administration, linked its targets to the SDGs, emphasizing initiatives that contributed to universal access to electricity, efficient and rational energy use, and diversification of the energy matrix. The plan's objectives included promoting sustainable development models by implementing climate change adaptation and mitigation measures and, under the NDC, fostering a business environment conducive to attracting investment and forming public-private partnerships. The sector's energy transition strategy that emerged from this plan, which informed the design of this programmatic policy-based loan (PBP), includes the promotion of energy efficiency; regional integration;[13] updates to the generation plan; public and private investment in nonconventional renewable energy and transmission; universal access; and the reduction of gender and disability gaps in the electricity sector.

1.6 A new president of the Republic of Ecuador was elected in October 2023, with a term of office through May 2025.[14] This administration's national development plan, "Development Plan for a New Ecuador 2024-2025,"[15] currently in effect, extends the alignment of its priorities and targets to the SDGs and the 2030 Agenda, providing continuity to the country's commitment to a just energy transition. The plan includes infrastructure, energy, and the environment among its fundamental priorities, and introduces as a policy the sustainability of a continuous supply of electricity in Ecuador. Accordingly, the following strategies are defined: (i) supply electricity with participation from public and private enterprises with a long-term focus, promoting self-generation, distributed generation, and energy storage systems; (ii) comprehensively plan the expansion and peak operation of electricity distribution systems and the street lighting system; and (iii) optimize energy consumption throughout the chain, strengthening the regulatory and institutional framework for energy efficiency and applying incentives for the use of technology and equipment with minimum energy performance standards.

1.7 **Current status of the country's electricity sector.** In the past 10 years, Ecuador has invested over US$10 billion in public capital in the electricity sector (roughly 9.4% of GDP in 2021), expanding transmission and distribution systems and generation capacity. The latter increased from 5,063 MW in 2012 to 8,254 MW in 2023, with 62% corresponding to hydropower, 35% thermal, and 3% nonconventional renewable energy. Peak demand increased by 31.7%

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12 Optional link 9 [6].

13 The IDB is financing the Ecuador segment of the project Ecuador-Peru 500-kilovolt Electricity Interconnection (5653/OC-RG), strengthening regional integration and promoting the development of SINEA.

14 According to decisions made by the government in 2023 and established in the Constitution of Ecuador, the current presidential term covers the remaining time from the previous term.

15 Optional link 9 [7].

between 2013 and 2022, and by approximately 9% in 2023. Average power consumption is projected to increase by 2.8% annually in the coming years. In 2023, total demand for electricity stood at 30,390 gigawatt-hours (GWh), 93.5% of which corresponded to electricity demand from distribution companies, 5.9% to self-consumption and large consumers, and 0.6% to exports for international connections.[16] These efforts, however, have fallen short of addressing the supply risks associated with heavy reliance on hydroelectric power generation and demand growth. In 2024, the private sector's share of total investment in generation is only 4%,[17] which is very low compared to the rest of the Latin American and Caribbean region.[18]

1.8 In late 2023, Ecuador began rationing electricity on an emergency basis, owing to a combination of several factors. This was mainly due to: (i) a lack of investment in energy generation; (ii) water shortages due to the exceptionally dry El Niño phenomenon, which resulted in low water flows in the area of the country's essential hydroelectric plants; (iii) lack of availability of thermoelectric power generation, attributable to preventive and corrective maintenance that was neither scheduled nor completed; and (iv) limited electricity imports from Colombia (which faced a similar water stress situation) and Peru, all of which contributed to high growth rates in electricity consumption (paragraph 1.7). This situation continues in 2024.[19]

1.9 Ecuador's electricity sector needs to invest roughly US$17.5 billion over the next decade.[20] Given the strong fiscal constraints facing the country, decisive steps are required to attract investment in the electricity service delivery chain, mainly through private capital.

1.10 **Status of the reform process toward a just energy transition with private sector involvement.** Since 2015, the country has been implementing significant reforms, based on the identified need for having a regulatory framework in place to expedite progress toward meeting the established targets and commitments, and that results in increasing private sector participation in electricity service delivery.

1.11 Seeking a self-sustaining electricity system that would prevent situations such as the power supply crisis of October 2023, the Ecuadorian government enacted the LOCE.[21] Under this law, the following mechanisms for private participation in electricity generation were implemented: (i) public selection processes aimed at diversifying the energy matrix; (ii) purchase prices for energy; (iii) costs of public electricity service; (iv) special authorization for private enterprises to participate in electricity transmission; and (v) facilitation of self-generation by regulated and unregulated customers.

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16 Optional link 9 [8].

17 Optional link 9 [9].

18 In 2015, private sector participation in electricity generation in 18 Latin American and Caribbean countries averaged 42%, while in Ecuador it was 12%. The decline to 4% shows that investment in generation during the past decade has come mainly from public funds. Revisiting Private Participation, Governance, and Electricity Sector Performance in Latin America.

19 Optional link 9 [10].

20 Optional link 9 [11].

21 Optional link 9 [12].

1.12 The new law is intended to promote economic and energy generation solutions with the aim of overcoming the energy crisis, promoting investment in electricity service delivery, and optimizing management of the public resources associated with the sector in the public and private spheres. The regulations for the LOCE were issued in February 2024.[22] Importantly, these regulations allow for investment costs to be integrated into the real costs of service delivery—an important step toward a self-financing system. These reforms resulted in the creation of a long-term market for private generation contracts for regulated demand and a short-term market for energy trading transactions between generators and free consumers.[23] This provides more supply options, promoting a paradigm shift from investment costs absorbed by the State to a system that generates conditions for the self-financing of new investments in generation and, in the medium term, in transmission. The rate structure established by the LOSPEE did not recognize investment costs, which disincentivized private sector participation and investment in the electricity sector.

1.13 Based on the sector's policy guidelines, supported under the first programmatic policy-based (PBP) loan of the series, the LOCE and its regulations also introduced reforms to the Energy Efficiency Act (LOEE). These included creating a national fund for energy efficiency investments, the financial mechanism to execute energy efficiency projects and their sources of finance, and the powers of the National Energy Efficiency Committee as the energy-efficiency policy coordinator and compliance monitor. All these measures are aimed not only at saving energy but also at making a positive contribution to improving the sector's financial sustainability.

1.14 The Ecuadorian government also issued Executive Decree 238 in October 2021,[24] which prescribes policies to develop public electricity, street lighting, electric vehicle charging, and energy storage services while ascribing a larger role to private sector initiatives. This government policy clearly articulates the urgent need to develop a regulatory framework that aligns to the priorities established therein for a just energy transition in Ecuador and that ensures that the benefits will reach the entire population, especially women, persons with disabilities, and low-income communities.

1.15 **The Bank's support for the reforms.** The IDB has supported these reforms through PBPs, investment loans, and technical cooperation operations (paragraphs 1.42 and 1.43). In 2015, the IDB supported this process through the first loan in the PBP series, Support for the Transition of the Energy Matrix in Ecuador (3420/OC-EC), with the second loan approved in 2020 (5044/OC-EC). That PBP made significant progress in transforming the sector between 2013 and 2018, notably: (i) under the "support the replacement of fossil fuels with electricity and enhance energy efficiency measures" objective, annual subsidies associated with liquid petroleum gas consumption were reduced as a result of 426,793 households switching from liquid petroleum gas to electricity for cooking and heating water; the annual volume of liquid fuels used in electricity generation decreased from 12.2 million barrels of oil equivalent to 10.6 million barrels of oil

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22 Optional link 9 [13].

23 Optional link 9 [14].

24 Optional link 9 [15].

equivalent; total distribution system electricity losses fell from 12.6% to 11.4%; and collection capacity improved; (ii) under the "increasing the coverage and quality of electricity, reducing electricity losses, improving commercial transactions, increasing the use of renewable energy sources, and reducing emissions" objective, the share of electricity in the country's power generation matrix generated from renewable energy sources increased from 54.3% to 83.7%; annual CO_2 emissions decreased from 9.2 million tons of CO_2 equivalent to 6.1 million tons of CO_2 equivalent; access to electricity was expanded through new connections to 49,247 households; and the frequency of service interruptions decreased; and (iii) under the "increased electricity exchanges in the region" objective, Ecuador increased its exports to Peru from 0.5 GWh to 22.13 GWh.[25]

1.16 **Progress under the first operation and the challenges of a just energy transition.** The first loan of this PBP series, Support for the Energy Transition and the Promotion of Investments in Ecuador's Energy Sector (5770/OC-EC and 5771/KI-EC) was approved in August 2023 for US$500 million (US$450 million from the IDB and US$50 million from KIF).[26] Because of the exacerbation of the electricity sector crisis since 2023, its intensification due to the El Niño phenomenon in 2024 (paragraph 1.8), and the fiscal deficit that limits public expenditure capacity, the government presented a set of reforms to accelerate the just energy transition and promote private sector participation; noteworthy among these is the LOCE (approved in January 2024). Based on these changes in the country's economic, policy, and institutional context, the Ecuadorian government has requested technical and financial support from the IDB to have this second PBP operation approved in 2024 and move forward with the consolidation of reforms of the sector's legal and regulatory framework toward a just energy transition (paragraph 1.36).

1.17 Through the measures included in the policy matrix for the first PBP operation, the government made significant headway on implementing and modifying the legal and regulatory framework, intended to: (i) promote sustainable management models; (ii) foster cooperation between the public and private sectors; (iii) improve energy transmission and distribution infrastructure; (iv) increase options to expand distributed generation, energy storage, smart metering, and active management of demand; (v) make electric vehicle charging services viable; (vi) promote the electrification of the automotive industry; and (vii) expand installed capacity to meet the sustained growth in demand for energy over the next 10 years anticipated in the Electricity Master Plan 2018-2027.

1.18 Despite the significant gains made, new investments are still needed in the sector and challenges and actions still need to be addressed to move ahead on the path toward a just energy transition. This includes expanding and implementing interventions addressing the challenges identified under the first PBP operation: (i) energy sector decarbonization; (ii) private sector participation in electricity service delivery; (iii) universal access to electricity; and (iv) equal opportunities in the sector for women and persons with disabilities.

1.19 **Challenge 1. Decarbonize the sector to achieve sector targets for 2030 and the NDCs.** The following areas were identified as needing regulatory and policy

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[25] Optional link 9 [16].

[26] Optional link 9 [17].

adjustments to pave the way toward achievement of the objectives of the transition and the decarbonization targets and commitments: (i) increase the share of renewable energy; (ii) introduce new alternative sources of renewable energy; (iii) enhance energy efficiency management; (iv) increase regional electricity exchanges; and (v) promote e-mobility.

1.20 **Increase the share of renewable energy.** In 2023, the share of renewable energy in Ecuador's energy matrix was 65.4%.[27] The country has committed to a target of 90% by 2030—a gap that poses a challenge for the sector's decarbonization agenda. Ecuador has significant potential to increase the share of renewable energy in its energy matrix and reduce the relative use of fossil fuels (34.6% in 2023) using various alternatives.

1.21 Under the first PBP operation, the Generation Expansion Plan was prepared and approved, based on a diversified electricity matrix for the entire country, with climate adaptation and resilience criteria, benefiting all the population. In addition, the evaluation of nonconventional renewable energies block projects (500 MW) recommended for contract award was completed, of which 493.7 MW would be executed by the private sector through public selection processes; and the Energy Transition Plan for the Galapagos Islands 2050 was approved, incorporating nonconventional renewable energy with the objective of achieving 100% from these sources by 2050 on the islands.

1.22 The country has called for continuing to increase its generation of renewable energy through public selection processes,[28] with an emphasis on implementation of renewable energy and large-scale energy storage. To achieve this, Ecuador will require ongoing updates to its medium- and long-term Electricity Master Plan that take into account power system safety, soundness, efficiency, and sustainability to generate power from sources with low environmental impact allowed under the current regulations. The Electricity Master Plan 2023-2032 includes adding 6,304 MW of power to the National Interconnected System's (SNI) power generation infrastructure by 2032, of which 90.7% will be from renewable energy. These projects include small- and large-scale photovoltaic, wind, geothermal, and hydropower technology. The estimated total investment is US$10.446 billion. Progress was made under the first operation, evaluating projects that include 836.1 MW. In the specific case of the Galapagos Islands (San Cristóbal, Santa Cruz – Baltra, Isabela, and Floreana), the plan, in the short term, calls for nonconventional renewable energy projects and energy storage systems for a total amount of US$81.3 million, in addition to US$63 million from the Conolophus Photovoltaic Generation Project, expanding capacity by 32 MW from photovoltaic sources and by 8.8 MW from wind turbines. By 2030, 85% of the demand from the first two islands and 100% of the demand from the last two islands will be met through renewable sources.

1.23 The Electricity Generation Expansion Plan for the Galapagos Islands 2023-2032 includes projects to implement new capacity for generating energy, adding a total of 45.5 MW at a cost of US$332.6 million, 82.4% of which are from nonconventional renewable energy and energy storage systems. This ambitious

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[27] Optional link 9 [18].

[28] Optional link 9 [19].

investment plan mostly includes participation from private sector financing (paragraph 1.30).

1.24 Distributed generation systems for self-supply reduce emissions, the SNI's operating and investment costs, and transmission and distribution losses.[29] However, these types of systems have been underutilized in Ecuador. They provided 38 MW of power in 2023, the main obstacle being business uncertainty stemming from the lack of regulatory clarity on setting sales prices and the connection allocation mechanism. The regulatory structure needs to be updated, clarifying the conditions for self-supply mechanisms in order to incentivize growth in the installation of distributed generation systems for self-supply, as an option to minimize the risk of power supply shortages.

1.25 **Introduce new alternative sources of renewable energy.** Under the first operation of the PBP series, a clear regulatory framework for electricity generation based on nonhazardous municipal solid waste was established. In addition, to expand the array of potential opportunities for energy matrix diversification, Ecuador has resources that represent new alternative sources with high potential for clean power generation, such as green hydrogen.[30] Technical studies were conducted on the resources available, investment needs, and future uses that determine green hydrogen's potential and its viability in the country. A roadmap for green hydrogen production and use needs to be prepared, including a framework of incentives for innovation aimed at developing private investment initiatives that can be reflected in the country's energy planning mechanisms.

1.26 **Enhance energy efficiency management.** The country has a basic legal framework in place for promoting energy efficiency, with the LOEE approved in March 2019[31] and its general regulations approved in November 2021. These were amended under the LOCE in January 2024. This is expected to decrease energy demand through improvements in its management and changes in consumption habits. The country's Strategic Distribution Plan 2022-2025 was prepared by the Office of the Deputy Minister for Electricity and Renewable Energy (VEER) and the Office of the Deputy Secretary for Distribution of the MEM, in cooperation with all electricity distribution companies. The following results were achieved with the first PBP operation of the series: (i) specific policy guidelines for the electricity sector issued by the MEM to promote energy efficiency in all consumption sectors through improved energy management, good practices, and technological innovation; and (ii) the publication of the Energy Transition Plan for the Galapagos Islands (2023), which includes energy efficiency actions such as replacing appliances with more efficient ones, a sustainable construction guide, and demand management measures. The main challenges the sector continues to face in the short and medium term to effectively promote energy efficiency are: (a) update the National Energy Efficiency Plan and include financing for its implementation; (b) establish a stable institutional mechanism with committed resources, to be able to carry out plans, programs, projects, and other activities included in energy efficiency planning instruments; (c) offer effective incentives and implement energy efficiency measures for high-consumption segments or products in the

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29 Optional link 9 [20].

30 Optional link 9 [21].

31 LOEE.

country, including the Galapagos Islands (for example, programs to replace inefficient equipment, technical standards issued for street lighting, and digitalization with smart metering); (d) streamline and target subsidies for fossil fuel consumption that lead to such consumption, particularly in the agribusiness sector;[32] and (e) streamline and target subsidies for electricity rates in the industry, which prevent price-signaling to promote the management of electricity demand and incorporate inefficiencies in the allocation of energy resources.

1.27 **Increase regional electricity exchanges.** In 2011, Bolivia, Chile, Colombia, Ecuador, and Peru agreed to create the Andean Electrical Interconnection System (SINEA), which aims to deepen and expand electricity exchanges to take advantage of the complementarity of its member countries' energy resources and enhance quality and security in the electricity supply. SINEA adopted a roadmap that includes three stages for implementation of an Andean Regional Electricity Market: (i) consolidation of bilateral transactions; (ii) establishment of a subregional electricity market between Colombia, Ecuador, and Peru harmonized through a regional regulatory framework; and (iii) a fully operational Andean Regional Electricity Market, with a regulatory framework consolidated across the countries. The roadmap also identifies new interconnection works to facilitate operation of a regional market. There is hydrological complementarity between Ecuador and Colombia during approximately three months of the year and between Ecuador and Peru during four to six months of the year. One country's dry season coincides with the other's rainy season, which triggers international transactions as the neighboring country's energy becomes cheaper.

1.28 Electricity transactions between Colombia and Ecuador are structured as exchanges of opportunity, taking into account each country's energy surplus to build hourly supply curves for imports and exports, in which decisions regarding the exchanges (quantities and prices) are made for the following 24-hour period. Ecuador and Peru use a bilateral contract system. Guided by the principles established in Andean Community Decision 816,[33] adopted with support from the first PBP operation, optimization will be achieved in the future through a coordinated economic dispatch model that simultaneously determines quantities and prices for all countries participating in the Short-term Andean Regional Electricity Market (initially, Colombia, Ecuador, and Peru). To implement this, Ecuador needs to define and approve the specifics of the mechanism for member country coordination to ensure that the exchanges are optimized, and that the energy matrix uses cheaper, cleaner energy. Considering the time needed to adapt national regulations to the commitments under the Andean regulations, a temporary regime for bilateral transactions between Peru and Ecuador will need to be established through existing asynchronous electric interconnections. This will be necessary until the 500 kilovolt (kV) electricity interconnection system between both countries begins operating and the Short-term Andean Regional Electricity Market is launched. Ecuador is making progress on its infrastructure commitments

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[32] In 2023, the government eliminated fossil fuel subsidies for shrimp farms larger than 30 hectares, generating estimated savings of US$150 million. In addition, it is planning to better target fuel subsidies and promote the energy transition with renewable sources, implementing compensation mechanisms to protect the most vulnerable.

[33] Optional link 9 [22].

through the Ecuador-Peru 500-kilovolt Electricity Interconnection Project, Ecuadorian Section (5653/OC-RG, currently in execution).

1.29 **Strengthening e-mobility.** Measurement of the energy sector's greenhouse gas emissions in the NDC includes the transportation sector's fossil fuel emissions, estimated at 49.8% of total energy sector emissions as of 2022.[34] For that reason, the lines of action for the energy sector include initiatives to develop sustainable transportation (paragraph 1.4). The LOCE stipulates that, beginning in 2030, all vehicles added to the urban or intercity public transportation service and for commercial transportation in continental Ecuador must have zero emissions. As of 2024, the decentralized autonomous governments, in coordination with the National Energy Efficiency Committee, are required to conduct studies and implement the infrastructure needed to ensure that this takes place. Ecuador has a total of 3,785 electric vehicles and 92 charging stations, of which 20 are rapid charging stations.[35] The MEM expects to have a total fleet of 85,291 electric vehicles by 2030, which would account for average annual savings of 4.6 tons of CO_2 per vehicle.[36] To achieve the goal of reducing greenhouse gas emissions in the transportation sector, the existing legislation needs to be rounded out with a regulatory framework that includes technical norms and standards and incentives for private investment in innovation and the promotion of electric vehicle sales and use, rapid charging station installation and operation, and integration of electric vehicles into the urban public transportation system.

1.30 **Challenge 2. Increasing private sector participation in the electricity sector.** In order for Ecuador to quickly harness alternative sources of nonconventional renewable energy, it needs new investments that are limited by fiscal constraints. To increase its capacity to meet the population's electricity needs and fulfill its commitments in a timely manner, the Ecuadorian government recognizes the importance of continuing to create conditions for private sector participation and financing. The mechanisms for pursuing this objective are presented in the policy matrix for the programmatic series through modifications in the regulations for the LOSPEE, laws, and additional regulations for electricity service delivery that promote new investments in order to attract private participation to the generation and transmission segments through public selection processes. Therefore, there is significant potential for business opportunities in the sector. Based on these improvements in the legal and regulatory environment, IDB Invest has been working with successful bidders of public selection processes to consolidate the development of these projects through possible financing (paragraph 1.22).

1.31 Renewable energy offers significant potential for private enterprise in Ecuador, leveraging technology experience and knowledge and the country's resources. The Electricity Master Plan proposes the development of 6,304 MW from new projects in the SNI and renewable energy and storage systems on the islands, mainly led by the private sector through public selection processes (paragraph 1.22). Recognizing the benefits of private financing for efficient investments and economic growth, the Ecuadorian government has moved ahead

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[34] Optional link 9 [23].

[35] Optional link 9 [24].

[36] The government expects electric vehicle use to quickly increase beginning in 2030, and reach a total of 476,598 by 2040. Data from the Electricity Sector Sustainable Mobility Plan, ARCERNNR, April 2023.

with regulations that improve the returns of these investments. However, the investments face business risks, which are addressed through payment guarantee mechanisms and other incentives to attract and maintain private investment in electricity service and distributed generation, technological innovation, alternative renewable sources, electric vehicles, and charging stations (optional link 4). The IDB is preparing the operation Guarantee for the Promotion of Private Investment in Renewable Energy, an investment guarantee aimed at improving the perception and risk level for renewable energy bid requests in Ecuador, to mobilize private investment toward the sector and thus contribute to transforming the energy matrix.

1.32 **Challenge 3. Achieving universal access to electricity service.** The Ecuadorian government has taken on the challenge of achieving universal access to electricity, a commitment that is reflected in its adoption of the 2030 Agenda. For almost two decades, Ecuador has endeavored to expand quality electricity service to rural and marginalized urban households, using the Fund for the Electrification of Rural and Marginalized Urban Areas (FERUM) as its main tool. An analysis of the FERUM's impact[37] found that the tool has been effective in improving access to quality electricity services and that electricity consumption has had significant positive impacts. Electricity coverage increased from 93.8% in 2008 to 97.43% in 2023.[38] Current estimates indicate that some 127,000 households lack access to electricity.[39] Population growth, especially in remote rural and marginalized urban areas where informal housing is common, interferes with the SNI's ability to efficiently deliver and manage electricity services. Consequently, regulations will need to be prepared with arrangements for the delivery and management of electricity services in remote areas, with and without grid extension, thereby ensuring their sustainability. The government's short-term strategy is to begin the process of providing universal access in the Amazon's rural areas; therefore, it needs to prepare the respective designs and investment plan.

1.33 **Challenge 4. Promoting gender equality and diversity in the electricity sector.** In Ecuador, only 21% of electric company employees are women. Of these, 15% hold administrative positions and 5% have operational or technical positions. In 2023, among the sector's 22 electric companies, only one woman held an assistant line position (live line, overhead lines, or underground networks).

1.34 To address this situation, the MEM, with support from the IDB, analyzed the gaps and prepared an institutional plan for gender in the electricity sector, including 22 companies. This plan includes raising awareness, technical training, hiring, infrastructure, education, regulations, internal structure, and innovation. It is financed through loan operations 4343/OC-EC and 4600/OC-EC, and own resources. As a result, in March 2023, the VEER issued Ministerial Agreement MEM-VEER-2023-0001-AM with guidelines for inclusive strategies with respect to gender and persons with disabilities. In August 2023, through Resolution MEM-VEER-2023-0010-RM, the gender strategy and action plan were approved, calling for electricity generation, transmission, and distribution companies to

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37 Optional link 9 [25].

38 Optional link 9 [26].

39 Amounts estimated by ARCONEL, previously known as ARCERNNR, based on data from the National Institute of Statistics and Census, 2022.

implement them. The plans are in the early stages of development, focusing on education and internal technical training with own resources (optional link 5). A monitoring mechanism with indicators aligned to the plan's components has been established.

1.35 Ecuador has had a Disabilities Act in place since 2012 that promotes the inclusion of persons with disabilities in the public and private spheres, establishing measures to ensure their social inclusion and eliminate physical, social, and communication barriers affecting them. Article 47 states that all employers with 25 or more employees must hire persons with disabilities to fill a minimum of 4% of permanent positions, in pursuit of gender equity and disability diversity. The diagnostic assessment (optional link 5) found that the 22 companies analyzed have persons with disabilities on staff. However, only five companies come close to meeting the quota established by the Disabilities Act. With respect to accessible infrastructure and signage, only two companies cover these two elements. Specifically, these 22 companies have 448 employees with disabilities and internal budgets of US$8.4 million as of December 2023, of which 89% was allocated to wages, 6% to equipment, 3.4% to infrastructure, and 1.3% to training. The MEM will continue monitoring adherence to these plans and budgets.

1.36 **Rationale for the second PBP operation.** To consolidate the gains achieved thus far and support the implementation of outstanding items on the agenda for a just energy transition in Ecuador, the country needs to address the identified challenges swiftly to provide continuity to its policy actions, regulatory measures, and sector reforms. Due to changes in the country context (paragraph 1.16) and the high priority placed on a just energy transition; the current crisis in the sector; the fiscal deficit that limits the government's expenditure capacity; the political will to address the needs; the sustainability requirements and current challenges in the sector; the progress made in the energy transition process; the level of preparation of the series of measures to approve this loan; and the need to accelerate and strengthen the establishment of signals to promote private participation and new investments in electricity supply given the energy crisis (paragraph 1.8), the Ecuadorian government requested IDB support through this second loan under the PBP one year earlier than planned (in 2024). The second PBP gives continuity to the results achieved in the just transition already under way, maintaining a sequential logic in the medium- and long-term policy measures to support the fulfillment of commitments regarding the sector's technical and economic sustainability, aimed at achieving a low-carbon, climate resilient energy sector that ensures the energy supply and benefits society.

1.37 Complementarily, the Bank is preparing technical cooperation operation Just and Inclusive Energy Transition in Ecuador (EC-T1567), for operational support, to help achieve the expected results under this PBP, with US$4.6 million in financing from the fund Global Affairs Canada. The objective of this technical cooperation operation is to support the Ecuadorian government with a just and inclusive energy transition that promotes dialogue facilitation and improves the management capacities of the national entities involved in achieving the objectives set under the

national targets for reducing CO_2 emissions.[40] The funds for this technical cooperation operation were certified on 27 March 2024 (required link 3).

1.38 **Changes to the Policy Matrix.** The program formulates a second consecutive stage of specific proposals under the same objectives as the first PBP operation. The policy commitments for this second operation mostly correspond to the commitments approved for the original design of the series. Some changes were made that strengthen its scope and acknowledge the progress that the government has made toward a just energy transition, maintaining alignment with the objectives set for the programmatic series. These changes reflect progress or strengthening of the proposed reforms, or adjustments to the instruments used to achieve them. Among the most significant changes are amending the LOSPEE and the LOEE and their regulations to incorporate investments into rates; strengthening promotion for participation and the expected role of the private sector; making energy efficiency initiatives operational and larger in scope by financing them; and making more progress than expected in reducing and targeting subsidies and introducing nonconventional renewable energy in the Galapagos Islands. These and other changes are described in the comparative matrix of changes in the policy conditions (optional link 1).

1.39 **Effectiveness of sector policy reforms.** The effectiveness of sector policy reforms is essential for countries' sustainable development. A stable regulatory framework that can be adapted enhances sector performance and its adoption of new technologies. The institutional framework and regulatory bodies fulfill the role of arbitrators in establishing the rules for functioning and efficiency of operations in energy markets, promote competition, have a bearing on the performance of service providers, and enable the integration of new technologies to facilitate the energy transition.[41] The evidence available indicates that flexibility in the regulatory and institutional environment enables the entry of new actors, facilitates integration of renewable energy, and enables the adoption of new technologies, which has resulted in reduced investment costs, lower greenhouse gas emissions, better energy prices, and increased system reliability.[42] It has also been demonstrated that more efficient price-setting mechanisms, combined with well-designed regulations and properly targeted transfer programs, can improve economic, social, and environmental results, particularly with respect to rate structures that incentivize solutions at the edge of the electricity grid, such as e-mobility and distributed generation.[43]

1.40 According to the Organisation for Economic Co-operation and Development,[44] regulatory reforms complement fiscal and monetary policies by creating ideal conditions for the sustainable development of countries. Likewise, a report by the

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[40] The technical cooperation operation supports this PBP and the achievement of its results by promoting private sector participation in generation from renewable energy sources, universal access to electricity, and gender equity and inclusion of persons with disabilities in the electricity sector. It is aimed at benefitting women, low-income individuals, the disadvantaged, and Indigenous communities of the Ecuadorian Amazon during the energy transition.

[41] Optional link 9 [27].

[42] Idem.

[43] Optional link 9 [28].

[44] Optional link 9 [29].

National Conference of State Legislatures (NCSL)[45] found that policies promoting modernization and innovation in electricity systems can improve resilience and reliability, while also offering electricity companies a less costly alternative to conventional transmission and distribution solutions. This operation takes into account the knowledge obtained from IDB flagship publication "From Structures to Services: The Path to Better Infrastructure in Latin America and the Caribbean"[46] and the publication "Reforms to Foster Sustainable and Inclusive Infrastructure in Latin America and the Caribbean,"[47] which highlight that the countries of the region need to address the sector's main challenges by implementing measures such as strengthening regulatory frameworks, promoting competition, and increasing access to energy services; as well as including climate objectives in planning and development for the sector in the long term. The project completion report for an IDB operation in Suriname, Support to the Institutional and Operational Strengthening of the Energy Sector III (2848/OC-SU), concluded that PBPs are appropriate instruments to support sector reforms involving multiple actors. Moreover, the main beneficiaries of these interventions are end consumers, in terms of access to a diversified and sustainable energy supply.

1.41 The evidence has shown that sector policies are essential for improving electricity sector performance, and that these reforms can lead to increased investment and better service quality by improving the sector's efficiency and financial sustainability. A recent IDB study[48] estimates the macroeconomic impact of the energy reform in Ecuador. The impact evaluation report prepared for the Electrification Program for Rural and Marginal Urban Areas II (3087/OC-EC) features an analysis of the socio-economic benefits "that justify the use of public resources to continue to equitably expand access to affordable and quality electricity services" (paragraph 1.32).

1.42 **The Bank's experience and lessons learned.** The Bank has supported multisector policy reform programs, and increasingly, the sustainable development of the energy sector in the region, especially with recent operations supporting energy transitions through PBPs and/or investment loans. The following lessons learned have been taken into account in this second PBP operation: (i) there is a higher likelihood of achieving policy results if they are aligned with government priorities (Program to Deepen Fiscal Reform in Colombia, phases I and II – 3284/OC-CO and 4552/OC-CO) and if they include a long-term vision (Sustainable and Resilient Growth Program II – 5552/OC-CO); (ii) for multisector programs, adequate coordination and assignment of responsibilities among the various entities participating in the design and implementation of reforms are necessary (Program to Support a Just, Clean, and Sustainable Energy Transition – 5278/OC-CH); (iii) the successful implementation of reforms partly depends on strengthening the institutional capacities of the relevant entities (Productive Development and Creative Economy Support Program – 5053/OC-CO); (iv) the Bank's support is relevant to deepening reforms (National Program to Ensure a

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45 NCSL, 2019. The policies and regulatory approaches that can enable the modernization of the grid include: (i) renewable portfolio standards; (ii) establishment of energy storage targets and mandates; and (iii) net metering.

46 IDB, 2020.

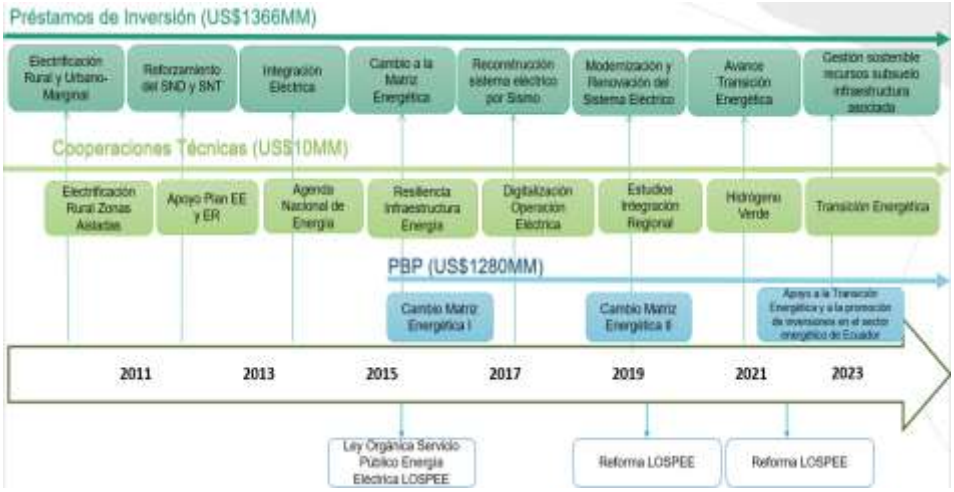
47 IDB, 2022.

48 Optional link 9 [30].

Sustainable and Efficient Energy Supply, Phase II – 4773/OC-CO); (v) it is necessary to have budgets allocated to implement initiatives in priority areas and move from policies to actions (4988/OC-CR, 5398/OC-CO; and 5399/KI-CO); and (vi) given the sensitivity of the decarbonization issue and the need for coordinated action among various government ministries, the time inputs necessary to consolidate the measures must be taken into account (5044/OC-EC).

1.43 The second PBP operation incorporates previous lessons learned, establishing policy results coordinated with the Ecuadorian government, defining responsibilities and reporting the results for each actor, strengthening execution units and national sector entities, and supporting investment in energy infrastructure to satisfy growing demand. Since 2010, the Bank has provided a total of US$2.646 billion[49] in financing and approximately US$10 million in technical cooperation assistance for this sector in Ecuador (optional link 7), including investment loans such as: (i) Sustainable Management of Underground Resources and Associated Infrastructure (4989/OC-EC) in 2020; (ii) Modernization and Renewal Program for Ecuador's Power System (4600/OC-EC) in 2018; (iii) Support for the Advancement of the Energy Matrix Transition in Ecuador (4343/OC-EC) in 2017; (iv) Program for the Reconstruction of Electricity Infrastructure in Areas Affected by the Earthquake in Ecuador (3906/OC-EC) in 2017; and (v) Investment Plan to Support the Transition of the Energy Matrix in Ecuador (3710/OC-EC) in 2016. There are plans to support the energy transformation through technical cooperation operation initiatives such as Support for the Energy Transition and Strengthening of Companies in Ecuador's Electricity Sector (ATN/OC-20048-EC). Moreover, the following operations are in preparation: (i) Support for the Digitalization of the Electricity Sector, Universal Access to Electricity, and Strengthening of Electricity Institutions (EC-T1553); (ii) Support for Universal Access to Electricity Service in the Ecuadorian Amazon (EC-T1554); and (iii) Just and Inclusive Energy Transition (EC-T1567) (required link 3).

Figure 1. IDB support for Ecuador



[49] Optional link 9 [31].

1.44 Lessons learned from experience with two previous PBP operations[50] (paragraph 1.15) were incorporated into the design of this new PBP: (i) PBPs are effective to support sector reforms that benefit consumers; (ii) institutional autonomy is essential, and therefore this program involves those responsible for each policy; (iii) progress monitoring and control practices need to be established; (iv) private sector participation requires financial incentives, which are essential for this PBP; (v) technical assistance is vital, including operational support (paragraph 1.37); and (vi) challenges are addressed in reforms in the short and medium term. This PBP reflects these lessons learned and highlights the active role of institutions in reforms within the deadlines established.

1.45 **Strategic alignment.** The PBP is aligned with the three strategic objectives of the IDB Group Institutional Strategy: Transforming for Scale and Impact (CA-631): (i) reducing poverty and inequality, by increasing electricity coverage, closing gaps in access to this service, and supporting regulatory changes to enhance the effectiveness of social spending and improving the targeting of subsidies; (ii) addressing climate change, by promoting initiatives that curb greenhouse gas emissions; and (iii) bolstering sustainable regional growth, by promoting investment in sustainable, resilient, and inclusive physical and digital infrastructure. The program is also aligned with the following operational focus areas: (i) biodiversity, natural capital, and climate action; (ii) gender equality and inclusion of diverse population groups; (iii) institutional capacity, rule of law, and citizen security; (iv) social protection and human capital development; (v) productive development and innovation through the private sector; (vi) sustainable, resilient, and inclusive infrastructure; and (vii) regional integration.

1.46 The operation is consistent with the Employment Action Framework with a Gender Perspective (documents OP-2289-1, GN-3057) as it includes analyses, interventions, and indicators related to the women's talent pillar. It is also consistent with the Energy Sector Framework Document (document GN-2830-8) and the Climate Change Sector Framework Document (document GN-2835-13) through the themes of sustainability, nonconventional renewable energy, and energy efficiency; and with the Sustainable Infrastructure Strategy for Competitiveness and Inclusive Growth (document GN-2710-5), by promoting continual improvements to infrastructure governance to increase efficiency in service delivery and supporting the development of policies for CO_2 mitigation. According to the multilateral development banks' joint methodology, 83.33% of the operation's resources will be invested in climate change mitigation activities. These resources contribute to the IDB's climate finance goal of at least 30% of the annual volume of approvals.

1.47 **Paris alignment.** The operation has been reviewed using the Joint Multilateral Development Banks' Assessment Framework for Paris Alignment and the IDB Group Paris Alignment Implementation Approach (document GN-3142-1). The program has been deemed to be: (i) aligned with the adaptation goals of the Paris Agreement; and (ii) universally aligned with the Paris Agreement mitigation targets (optional link 2).

1.48 This PBP is aligned with the IDB Group's Amazonia Forever regional coordination program, which promotes sustainable and inclusive development in the

[50] Optional link 9 [32].

Amazon region. It contributes to the sustainable infrastructure pillar by promoting the decarbonization of the energy sector and universal access to electricity in rural areas of the Amazon. It is also aligned with the crosscutting areas of gender, inclusion, and climate, according to the conceptual framework for the Amazon initiative set forth in document GN-3036-4.

1.49 **The Bank's strategy with Ecuador.** The operation is aligned with the IDB Group Country Strategy with Ecuador 2022-2025 (document GN-3103-1) by contributing to the following strategic objectives: (i) strengthening regulatory frameworks that facilitate private investment; (ii) expanding the coverage and quality of physical and technological infrastructure; and (iii) expanding access to and improving coverage of basic and social services. The operation is specifically aligned with the following priority areas: (i) development of the productive sector as a driver of sustainable growth, by improving the energy balance sheet further toward renewable energy and carrying out climate change resilient investments with minimal greenhouse gas emissions; and (ii) strengthening of social progress, with emphasis on reducing gender gaps.

1.50 **Consistency with the Bank's Public Utilities Policy.** The program is consistent with the objectives of the IDB Public Utilities Policy (document GN-2716-6), (optional link 3), complying with its principles through measures that promote: (i) access to and efficiency of public utilities, improving the quality and efficiency of the service and promoting universal access; (ii) electricity service governance, fostering transparency, reducing subsidies, and promoting energy savings; and (iii) environmental sustainability, including renewable energy and the reduction of CO_2 emissions; social sustainability, through gender equity and accessibility for persons with disabilities; and economic sustainability, verifying the cost-effectiveness of the reforms. Cost-benefit, cost-effectiveness, and financial sustainability analyses have been prepared, pursuant to the provisions of document GN-2716-6.

B. Objectives, components, and cost

1.51 **Objective.** The program's general objective is to support the Ecuadorian government's efforts toward a just energy transition by fostering public and private investment. Its specific objectives are to: (i) support the decarbonization of the energy sector by promoting nonconventional renewable energy sources, new alternative generation sources, energy efficiency and demand management measures, regional integration, and e-mobility; (ii) increase private sector participation in electricity service delivery; (iii) make strides toward universal access to electricity; and (iv) reduce gender and disability gaps in the electricity sector.

1.52 **Component 1. Macroeconomic stability.** The PBP, as a general condition, requires maintaining a macroeconomic framework that is conducive to achieving the program's objectives and consistent with the guidelines set forth in the sector policy letter.

1.53 **Component 2. Support for energy decarbonization.** Under this component, as for the first PBP operation, support will be provided for five key elements: (i) incorporation of renewable energy; (ii) new high-potential alternative generation sources; (iii) energy efficiency and demand management; (iv) regional integration; and (v) e-mobility. Instead of the 14 conditions initially proposed, the second PBP operation includes 16 conditions. Of these, two remain unchanged from the

proposal under the first PBP, five were strengthened, four were modified, two were replaced, and three were added.

1.54 The conditions that remain unchanged are: (i) 2.1.3. Implementation of actions to incorporate nonconventional renewable energy into the Energy Transition Plan for the Galapagos Islands 2050; and (ii) 2.2.1. Development of a roadmap[51] for green hydrogen production and use, the scope of which will be reflected in the country's energy planning mechanisms.

1.55 The conditions that have been strengthened are: (i) 2.1.1. Updating of the Generation Expansion Plan, incorporating nonconventional renewable energy at a large scale with climate adaptation and resilience criteria, strengthened by including "as part of the Electricity Master Plan 2023-2032, accompanied by the Contingency Plan to manage deficits in generation in the SNI in 2023 and the SNI Work Plan 2024-2025"; (ii) 2.3.2. Creation of a fund to promote energy efficiency for the financing of plans, projects, and other activities set forth in the laws, plans, programs, and/or other energy efficiency planning instruments, strengthened by including "establishing the mechanism to finance the fund"; (iii) 2.3.5. Approval of a program to expand the use of smart meters, strengthened by including "this digitalization program will include supervision, monitoring, and evaluation"; (iv) 2.3.6. Approval of an energy substitution plan with energy efficiency measures for the shrimp industry, including public consultations and training, strengthened by adding "including financing"; and (v) 2.3.7. Implementation of the energy efficiency and demand management measures set out in the Energy Transition Plan for the Galapagos Islands 2050, strengthened with more details by including "approved resources" and "specifically so that at least 76% of street lighting on the islands consists of LED lamps."

1.56 The conditions modified to specify their scope, without changing their purpose and rationale, are: (i) 2.2.2. Development of a regulatory framework for green hydrogen production and use in Ecuador, was modified to specify "Regulations for the LOCE as the first step in the development of a regulatory framework for green hydrogen production and use in Ecuador"; (ii) 2.3.3. Launch of a program for the large-scale replacement of air conditioners in the coastal and eastern regions, with the location changed to "in the Galapagos Islands" since, according to the MEM's schedule, the program will begin in the Galapagos and then continue in the coastal and eastern regions. The energy efficiency fund is expected to continue financing the coastal and eastern regions; (iii) 2.3.4. Issuance of standards and labeling indicating the end use of equipment, modified to specify standards and labeling for the end use of lamps and transformers; and (iv) 2.4.1. Approval of the proposed Andean Electricity Market regulatory harmonization reform, modified with "establishment of a transition period to begin the Andean Electricity Market," until the implementation of the Short-term Andean Regional Electricity Market and the 500 kilovolt electricity interconnection system between Ecuador and Peru. The agreement defines the exchange conditions between the two countries based on the responsibilities of the parties, availability of energy surplus, transmission capacity, and payment guarantee mechanisms.

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[51] The roadmap includes preparing environmental and social studies throughout the supply chain and use of this alternative.

1.57 The conditions that were replaced, without changing their purpose and rationale, are: (i) 2.3.1. Updating of the Energy Efficiency Plan incorporating resources for its execution. Because the LOCE was approved, the original condition was eliminated and replaced with "Issuance of the regulations for the LOCE, including reform of the regulations for the LOEE"; and (ii) 2.5.1. Approval and implementation of a proposal to create incentives for end users of e-mobility and for private sector investment in charging stations, including cybersecurity considerations. Because of the provisions of the new LOCE, regarding postponing targets for the electric vehicle fleet, the condition was replaced with: "Provisions for e-mobility issued by electricity sector institutions and for electric vehicle charging service issued by electricity distribution companies."

1.58 The conditions that were added and that strengthen the matrix are: (i) 2.1.2. Contracts signed for 714 MW (includes 310 MW for El Aromo and Villonaco) for electricity generation from nonconventional renewable energy sources; (ii) 2.5.2. Update the fee schedule and charging stations; and (iii) 2.3.8. Elimination of electricity rate subsidies during night hours for the industrial sector.[52]

1.59 **Component 3. Promotion of private sector participation in the electricity sector.** The objective is to promote a legal and regulatory framework that stimulates the recovery of investment and private sector participation in the electricity sector. Instead of the single condition originally proposed under the first PBP, the second PBP operation includes four conditions. Of these, one was modified, without changing its purpose and rationale; and three were added, strengthening the matrix. The condition modified was 3.1.1. Establishment of the trust that will serve as a payment guarantee instrument to promote private sector participation in power generation; "trust" was changed to "comprehensive payment guarantee mechanism." Through this mechanism, the Ecuadorian government guarantees, as a priority and non-postponable payment, the payment of the obligations if the business revenue risk materializes for electricity sector concession contracts. The added conditions are: (i) 3.1.2. Issuance of the regulatory framework for distributed generation for self-supply by regulated electricity consumers, to promote private investment; (ii) 3.1.3. Issuance of a new LOCE that includes private sector participation in the electricity sector, as well as incorporating real costs into electricity rates, including those from investment, to make the service more efficient; and (iii) 3.1.4. Issuance of the general regulations for the LOCE with reforms of the general regulations for the LOSPEE.

1.60 **Component 4. Promotion of universal access to electricity.** This component promotes policies to achieve universal access to electricity by 2030, in line with the SDGs and the just energy transition. The conditions originally established in the first PBP operation were: (i) 4.1.1. Approval and financing of the plan for universal access to electricity by 2030. This condition was eliminated, since the operation was brought forward to 2024, and the government needs definitions for the financing of this plan, which are for 2025; and (ii) 4.1.2. Approval and publication of regulations with arrangements for delivering and managing electricity services

[52] According to ARCONEL, in 2020, invoicing by the Servicio de Alumbrado Público General (Public Illumination Service) for the industrial sector without rate incentives was US$18.66 million. With incentives, invoicing amounted to US$6.71 million, a decrease of US$11.95 million, equivalent to 64.04% (Memorandum MEM-VEER-2023-0176-ME).

in remote areas, including interoperability with the SNI. This condition was modified by 4.1.1. Approval of arrangements for delivering and managing electricity services in remote areas, including with and without grid extension.

1.61 **Component 5. Promotion of gender and disability equity in the electricity sector.** This component will promote the creation of a strategy and action plan for gender equity and inclusion of persons with disabilities in the electricity sector. The three conditions originally established in the first PBP operation remain unchanged: (i) 5.1.1. Approval and launch of action plans with a specific roadmap establishing strategies and actions for the inclusion of women and persons with disabilities at electricity sector institutions; (ii) 5.1.2. Budgetary allocations to finance the implementation of actions to promote compliance with the Disabilities Act; and (iii) 5.1.3. Implementation of the gender equity actions set out in the Energy Transition Plan for the Galapagos Islands 2050. (optional link 5).

C. Key results indicators

1.62 The expected outcomes appear in the results matrix (Annex III) and will be measured using indicators related to achievement of the PBP's objectives (Table 1).

Table 1. Outcome indicators

Objective	Expected outcomes
General objective. Support the Ecuadorian government's efforts toward a just energy transition by fostering public and private investment.	Share of total energy sector greenhouse gas emissions attributable to power generation, reduced.
Specific objective 1. Support the decarbonization of the energy sector.	1.1 Nameplate capacity of renewable energy power generation within the SNI, increased. 1.2 Share of power generated from renewable energy, increased. 1.3 Nameplate capacity of renewable energy power generation in the Galapagos Islands, increased. 1.4 Number of shrimp farm users connected to the grid who have replaced fossil fuels with electricity, increased. 1.5 Progress in the implementation of the 500 kV transmission system for electricity exchanges between Ecuador and Peru. 1.6 New electric vehicle charging stations installed.
Specific objective 2. Increase private sector participation in electricity service delivery.	2.1 Private-sector participation in power generation using renewable energy, increased. 2.2 Contracts for renewable energy projects awarded through public selection processes. 2.3 New nonconventional renewable energy involving private sector financing in the Galapagos Islands. 2.4 Distributed generation capacity for self-supply, increased.
Specific objective 3. Make strides toward universal access to electricity.	3.1 Households newly connected to electricity, nationwide. 3.2 Households newly connected to electricity, in rural and marginalized urban areas.
Strategic objective 4. Reduce gender and disability gaps in the electricity sector.	4.1 Public electric companies with a gender roadmap establishing gender inclusive strategies and actions. 4.2 Public electric companies whose facilities are accessible to and include signage for persons with disabilities.

1.63 **Impact and benefits.** The analysis of the theory of change for the entire programmatic series (optional link 8) showed a direct correlation between the challenges identified that the sector faces, the interventions proposed under the program to address these challenges, and the outcomes expected. The design of the measures supported by the PBP seeks to respond to the specificity of every element that prevents achieving the strategic objectives and facilitates attaining the expected benefits. The program will benefit the country's entire population by providing the electricity service required to meet growing demand, thus making headway toward a just, inclusive, sustainable, and clean energy transition and reducing total greenhouse gas emissions in line with the NDC. It will especially benefit: (i) communities that gain access to electricity (80,358 households nationwide, 25,645 of which are located in rural or marginalized urban areas); (ii) private enterprises engaged in power generation from renewable resources,[53] e-mobility, or new alternative energy sources, thereby creating employment opportunities and stimulating economic activity; and (iii) women and persons with disabilities, who will benefit from new job opportunities at sector companies and from access to technical training, violence prevention training, and community engagement. The number of beneficiaries will be specified in the 100 action plans to be developed with the participating electric companies. The increase in private sector financing for the sector and cuts to fossil fuel subsidies, coupled with a decrease in fossil fuel consumption as a result of the implementation of this reform process, will free up fiscal resources in a context of limited public funds. This positive impact could materialize with continued Bank support, thus ensuring the sustainability of this programmatic series (paragraphs 2.6, 2.7, and 2.8) and their linkage to other operations planned in different areas of the Bank (optional link 3).

1.64 The energy transition is expected to increase new job opportunities and private sector participation in electricity service delivery. At the same time, the annex on private sector participation and employment in Ecuador's energy transition (optional link 4) suggests that the transition should not lead to job losses in the energy sector.

II. Financing Structure and Main Risks

A. Financing instruments

2.1 This is the second operation of a PBP series, structured as two independent but technically linked loans. The programmatic approach of PBPs is ideal because of their flexibility to adapt to changes in countries and administrations, enabling adjustments to the scope of this second operation due to changes in the context.

2.2 **Dimensioning.** Pursuant to paragraph 3.27(b) of "Policy-Based Loans: Guidelines for Preparation and Implementation" (document CS-3633-2), the dimensioning of the loan was based on the country's broad fiscal resource needs. This second operation consists of US$500 million from the Bank's Ordinary Capital and US$100 million in cofinancing from KIF, which is administered by the Bank. This amount accounts for 36% of IDB program in Ecuador for 2024; 5.2% of the

[53] The MEM expects that the new regulations will attract investment to increase distributed generation capacity from 11 MW in 2022 to 60 MW by 2025, with the potential for continuous growth.

Ecuadorian government's estimated financing requirements for 2024 (US$9.652 billion); 1.29% of total external debt (US$46.574 billion as of February 2024); and 2.46% of multilateral debt (US$24.358 billion as of the same date).[54]

B. Environmental and social risks

2.3 The operation supports the development of policies, standards, management instruments, and other institutional strengthening actions. Therefore, no significant or direct adverse socioenvironmental impacts are anticipated, pursuant to the Environmental and Social Policy Framework (GN-2965-23).

C. Fiduciary risks

2.4 No fiduciary risks have been identified. The loan proceeds will be transferred to the National Single Treasury Account to cover the country's financing needs, and Ecuador has the requisite financial management and control tools in place for this purpose. The financing does not entail procurement.

D. Other risks and key issues

2.5 Regarding the execution environment, a medium-high level risk was identified in the event of any changes in national authorities that could have an impact on maintaining the policy conditions for the second PBP operation and the fulfillment of its targets. This would affect the achievement of results for the policy measures proposed under the program, slowing down actions aimed at ensuring the power supply and scope of the country's energy transition. This risk will be mitigated by the fact that all policy measures proposed for the second programmatic operation and the fulfillment of its targets are being supported by various Bank mechanisms. These actions include supporting the triggers for this second operation, with efforts being made to identify channels of high-level technical dialogue to continue deepening the just energy transition and achievement of key program milestones (paragraph 2.7). This operation is part of the energy transition strategy that the country has been implementing since 2015 and is also part of the Bank's ongoing operational program (3494/OC-EC; 3710/OC-EC; 3906/OC-EC; 4343/OC-EC; 4600/OC-EC; 4989/OC-EC, and 5653/OC-RG) (paragraphs 1.42 and 1.43).

2.6 **Sustainability.** The sustainability of the reforms under the PBP is based on the Ecuadorian government's commitment to a just and clean energy transition as outlined in paragraphs 1.4 through 1.14. The commitment to move forward with transforming the energy matrix began in 2009 when it was included in the Government Plan 2009-2013 and the Electricity Master Plan 2009-2020. Subsequent government plans[55] reiterated this commitment with objectives aimed at implementing climate change mitigation and adaptation measures. In 2015, the Ecuadorian government adopted the United Nations 2030 Agenda for Sustainable Development, which charts a transformative vision toward economic, social, and environmental sustainability, as national government policy.[56] The sustainability of the reforms is strengthened by the policy letter, through which the Ecuadorian

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54 Optional link 9 [33].

55 Optional link 9 [34].

56 Optional link 9 [35].

government commits to fulfilling, developing, and implementing the policy measures proposed in this PBP. Its policy measures (paragraphs 1.52 to 1.61) establish the legal and regulatory bases for setting up the short- and long-term electricity market, to ensure that it is sustainable, competitive, efficient, and has a high level of innovation. This, in turn, will promote new investment from the public and private sectors in generation, self-generation, transmission, distribution, and street lighting; as well as guarantee fair competition, mainly for the new private sector stakeholders.

2.7 To continue moving forward with a just and inclusive energy transition, the government has identified the sector's investment needs, reflected in the Electricity Master Plan 2023-2032. These investments are more relevant given the energy crisis that has been gripping the country since 2023. This situation has demonstrated the need for additional reliable generation infrastructure that diversifies and supports the generation system from renewable energy and the corresponding investments in electricity transmission. In addition, to achieve the technical and financial sustainability of the sector, it is necessary that the government develop and implement the reforms included in the LOCE. This includes developing the short- and long-term electricity markets, and strengthening the MEM, ARCONEL, and electricity companies, through an analysis of risk management, governance, and the proposal of an action plan to strengthen institutions and capacities. Specifically for rate issues, support for ARCONEL and the MEM will continue by updating the studies of service delivery costs, defining progress paths based on impact studies, and developing the corresponding fee schedules. The MEM will also receive support in the form of lessons learned and continuous improvement of public calls for tenders for the purpose of developing new nonconventional renewable energy and electricity transmission projects. By implementing these strategies, the government strengthens its commitment to the energy transition, which mitigates the risk associated with the program (paragraph 2.5), thereby ensuring its continuity and sustained progress.

2.8 The IDB will continue supporting the government with implementation of a just and inclusive energy transition (optional link 7), including particular attention to achieving the targets of universal access to electricity, technical development for energy efficiency, and active participation in the regional electrical integration process through support and technical dialogue. This will take place through technical cooperation operations in preparation EC-T1567 (paragraph 1.37), EC-T1553, and EC-T1554 (paragraph 1.43); and knowledge exchange with successful electricity markets to incorporate lessons learned into the new Ecuadorian electricity market (paragraph 1.12).

III. Implementation and Management Plan

A. Summary of implementation arrangements

3.1 **Borrower and executing agency.** The borrower is the Republic of Ecuador and the executing agency is the Ministry of Economy and Finance (MEF). The MEF, with technical support from the Ministry of Energy and Mines (MEM), will be responsible for: (i) promoting the achievement of the policy objectives; (ii) coordinating with the participating agencies and providing evidence of fulfillment of the agreed policy conditions; and (iii) gathering and providing the

information that the Ecuadorian government and the Bank will use to measure and evaluate the program outcomes. The MEM will be responsible for the program's technical coordination and ensure fulfillment of the measures for the electricity sector.

3.2 **Special contractual conditions precedent to the sole disbursement of the loan. The sole disbursement will be contingent upon the fulfillment of the policy reform conditions as set out in the policy matrix (Annex II) and the other conditions established in the loan contract.**

B. Summary of arrangements for monitoring results

3.3 A monitoring and evaluation plan (required link 4) has been prepared, outlining the program's monitoring instruments. Fulfillment of the disbursement conditions and output indicators will be determined by verifying the information in the means of verification matrix (required link 2), which specifies the program's measures and the corresponding agency responsible for its execution. The expected outcomes and indicators, with their baselines and targets, are presented in the results matrix (Annex III), consistent with the policy reforms in the policy matrix (Annex II).

3.4 **Evaluation.** The results will be evaluated with a project completion report 24 months after implementation of the second PBP operation (2026). The evaluation, which will follow "Project Completion Report: Principles and Guidelines of the IDB,"[57] will analyze the program's relevance, effectiveness, and sustainability, its contributions to the energy transition, and the performance of the Bank and the executing agency. An ex post cost-benefit analysis will be performed following the methodology used for the ex ante cost-benefit analysis, evaluating fulfillment of the Public Utilities Policy. The project completion report, which will cover the results of the first and second operations of the series, will be prepared by the Energy Division up to 24 months after the closing of the second PBP operation.

IV. POLICY LETTER

4.1 The policy letter (required link 1) affirms the Ecuadorian government's commitment to the objectives and actions planned for the entire programmatic series. The Bank and the Government of Ecuador have agreed on the policy matrix (Annex II), which describes the policy actions for the second programmatic operation.

[57] Optional link 9 [36].

Development Effectiveness Matrix		
Summary	EC-L1293	
I. Corporate and Country Priorities		
Section 1. IDB Group Institutional Strategy Alignment		
Operational Focus Areas	-Biodiversity, natural capital, and climate action -Gender equality and inclusion of diverse population groups -Institutional capacity, rule of law, citizen security -Social protection and human capital development -Sustainable, resilient, and inclusive infrastructure -Productive development and innovation through the private sector -Regional integration	
[Space-Holder: Impact framework indicators]		
2. Country Development Objectives		
Country Strategy Results Matrix	GN-3103-1	(i)Strengthen the regulatory frameworks that facilitate private investment; (ii) Expand the coverage and quality of physical and technological infrastructure; (iii) Expand access to and improve coverage of basic and social services
Country Program Results Matrix		The intervention is not included in the 2024 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		Evaluable
3. Evidence-based Assessment & Solution		8.1
3.1 Program Diagnosis		2.5
3.2 Proposed Interventions or Solutions		1.6
3.3 Results Matrix Quality		4.0
4. Ex ante Economic Analysis		N/A
5. Monitoring and Evaluation		9.5
5.1 Monitoring Mechanisms		4.0
5.2 Evaluation Plan		5.5
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood		Medium Low
Environmental & social risk classification		N.A.
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)		Budget, Treasury, Accounting and Reporting, External Control, Internal Audit.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	EC-T1414, EC-T1478 y EC-T1438

Evaluability Assessment Note:
The program is structured as a PBP. This is the second of two operations whose policy actions aim to support the country in adopting measures to promote a just energy transition. The proposal presents an operation (EC-L1293) for a total of US$600,000,000 to be financed in US$500,000,000 through the second tranche of the PBP and US$100,000,000 through KIF cofinancing. The specific objectives of this operation will be: (i) to support the decarbonization of the energy sector, promoting Non-Conventional Renewable Energy (NCRE) sources, new alternative generation sources, Energy Efficiency (EE) measures and demand management, regional integration and electric mobility; (ii) to increase private participation in the provision of electricity services; (iii) to advance in universal access to electricity; and (iv) to reduce the gender and Persons with Disabilities (PwD) gaps in the electricity sector. The achievement of these objectives will contribute to the General Objective of supporting the Government of Ecuador's (GoE) efforts towards a just energy transition by promoting public and private investment.

The proposal presents an adequate diagnosis of the problem. Specifically, a situation characterized by insufficient investments in the sector aimed at a just energy transition. The proposed solutions are appropriate to respond to the identified problem and its contributing factors and are related to the General Objective. The results matrix is congruent with the vertical logic of the project and includes appropriate indicators at the outcome level associated with the Specific Objectives and the General Objective. The result indicators are correctly defined to measure the achievements attained by the program and the fulfillment of its specific objective, while the strategic alignment with the cross-cutting themes is reflected in output and result indicators.

The project includes a monitoring and evaluation plan that is in line with Bank standards. The effectiveness of the proposed intervention will be measured through a before-after comparison to verify the achievement of targets. For this analysis, it is foreseen to use information from external outcome verifications.

POLICY MATRIX

PROGRAM OBJECTIVE:	The program's general objective is to support the Ecuadorian government's efforts toward a just energy transition by fostering public and private investment. Its specific objectives are to: (i) support the decarbonization of the energy sector by promoting nonconventional renewable energy sources, new alternative generation sources, energy efficiency and demand management measures, regional integration, and e-mobility; (ii) increase private sector participation in electricity service delivery; (iii) make strides toward universal access to electricity; and (iv) reduce gender and disability gaps in the electricity sector.

Components/Policy objectives	Policy conditions Programmatic operation II	Status of fulfillment of policy conditions, programmatic operation II[1]
Component 1. Macroeconomic stability		
1.1 **Macroeconomic stability**	1.1.1. Maintain a macroeconomic framework that is conducive to achievement of the program objectives and consistent with the guidelines set forth in the sector policy letter.	**Fulfilled**
Component 2. Support for energy decarbonization		
2.1 **Renewable energy.** Move forward with the diversification of the energy matrix.	2.1.1. Updating of the Generation Expansion Plan under the Electricity Master Plan 2023-2032, incorporating nonconventional renewable energy at a large scale with climate adaptation and resilience criteria. Accompanied by the Contingency Plan to manage deficits in generation in the SNI in 2023 and the SNI Work Plan 2024-2025.	**Fulfilled** (Q2 2024)
	2.1.2. Contracts signed for 714 MW (includes 310 MW for El Aromo and Villonaco) for electricity generation from nonconventional renewable energy sources.	**Fulfilled** (Q4 2023)
	2.1.3. Implementation of actions to incorporate nonconventional renewable energy into the Energy Transition Plan for the Galapagos Islands 2050.	**Fulfilled** (Q2 2024)
2.2 **New high-potential alternative generation sources.** Adopt policies that promote green	2.2.1. Development of a roadmap for green hydrogen production and use, for which the scope will be reflected in the country's energy planning mechanisms.	**Fulfilled** (Q2 2024)

[1] This information is merely indicative as of the date of this document. Pursuant to the provisions of the document "Policy-based Loans: Guidelines for Preparation and Implementation" (document CS-3633-2), fulfillment of all the established disbursement conditions, including the maintenance of an appropriate macroeconomic policy framework, will be verified by the Bank when the borrower submits the corresponding disbursement request and duly reflected in the disbursement eligibility memorandum.

Components/Policy objectives	Policy conditions Programmatic operation II	Status of fulfillment of policy conditions, programmatic operation II[1]
hydrogen and solid waste as part of the energy transition.	2.2.3. Regulations for the Energy Competitiveness Act (LOCE) as the first step in the development of a regulatory framework for green hydrogen production and use in Ecuador.	**Fulfilled** (Q1 2024)
2.3 **Energy efficiency and demand management.** Develop a strategy to implement a coherent policy for promoting energy efficiency in the country.	2.3.1. Reform of the regulations for the LOCE, including reform of the regulations for the Energy Efficiency Act (LOEE).	**Fulfilled** (Q1 2024)
	2.3.2. Creation of a fund to promote energy efficiency for the financing of plans, programs, projects, and other activities set forth in the laws, plans, programs, and/or other energy efficiency planning instruments, establishing the mechanism to finance the fund.	**Fulfilled** (Q1 2024)
	2.3.3. Launch of a program for the large-scale replacement of air conditioners in the Galapagos Islands.	**Fulfilled** (Q2 2024)
	2.3.4. Issuance of standards for street lamps and transformers, including technical specifications; and labeling for the end use of street lamps.	**Fulfilled** (Q1 2024)
	2.3.5. Approval of a national program to expand the use of smart meters. This digitalization program will include supervision, monitoring, and evaluation.	**Fulfilled** (Q2 2024)
	2.3.6. Approval of an energy substitution plan with energy efficiency measures for agribusiness, including public consultations and training for the sector, as well as financing.	**Pending fulfillment** (Q3 2024)
	2.3.7. Resources approved to implement the energy efficiency and demand management measures set out in the Energy Transition Plan for the Galapagos Islands 2050, specifically so that at least 76% of street lighting on the islands consists of LED lamps.	**Fulfilled** (Q2 2024)
	2.3.8. Elimination of electricity rate subsidies during night hours for the industrial sector.	**Fulfilled** (Q4 2023)
2.4 **Regional integration.** Development of a mechanism for coordinating dispatch with members of the Andean Electricity Market.	2.4.1. Establishment of a transition period to begin the Andean Electricity Market.	**Fulfilled** (Q4 2023)
2.5 **E-mobility.** Development of a regulatory framework for electric vehicles and charging stations.	2.5.1. Provisions for e-mobility issued by electricity sector institutions and for electric vehicle charging service issued by electricity distribution companies.	**Fulfilled** (Q3 2023)
	2.5.2. Update the fee schedule and charging stations.	**Fulfilled** (Q4 2023)

Components/Policy objectives	Policy conditions Programmatic operation II	Status of fulfillment of policy conditions, programmatic operation II[1]
Component 3: Promotion of private-sector participation in the electricity sector.		
3.1 **Promotion of private sector participation.** Promote a regulatory framework that stimulates private sector participation in the electricity sector.	3.1.1. Establishment of a comprehensive payment guarantee mechanism to promote private sector participation in power generation.	**Fulfilled** (Q1 2024)
	3.1.2. Issuance of the regulatory framework for distributed generation for self-supply by regulated electricity consumers, to promote private investment.	**Fulfilled** (Q4 2023)
	3.1.3. Issuance of a new LOCE that includes private sector participation in the electricity sector, as well as incorporating real costs into electricity rates, including those from investment, to make the service more efficient.	**Fulfilled** (Q1 2024)
	3.1.4. Issuance of the general regulations for the LOCE and reforms of the general regulations for the Public Electricity Service Act (LOSPEE).	**Fulfilled** (Q2 2024)
Component 4. Promotion of universal access to electricity		
4.1 **Rural electrification.** Promote policies to achieve universal access to energy in Ecuador by 2030, in line with the SDGs.	4.1.1. Approval of arrangements for delivering and managing electricity services in remote areas, with and without grid extension.	**Fulfilled** (Q2 2024)
Component 5. Promotion of gender and disability equity in the electricity sector		
5.1 **Gender and persons with disabilities.** Promote equality of opportunities for women and persons with disabilities in the electricity sector.	5.1.1. Approval and launch of action plans with a specific roadmap establishing strategies and actions for the inclusion of women and persons with disabilities at electricity sector institutions.	**Fulfilled** (Q4 2023)
	5.1.2. Budgetary allocations to finance the implementation of actions to promote compliance with the Disabilities Act.	**Fulfilled** (Q2 2024)
	5.1.3. Implementation of the gender equity actions set out in the Energy Transition Plan for the Galapagos Islands 2050.	**Fulfilled** (Q2 2024)

RESULTS MATRIX

PROGRAM OBJECTIVE:	The program's general objective is to support the Ecuadorian government's efforts toward a just energy transition by fostering public and private investment. The specific objectives are to: (i) support the decarbonization of the energy sector by promoting nonconventional renewable energy sources, new alternative generation sources, energy efficiency and demand management measures, regional integration, and e-mobility; (ii) increase private sector participation in electricity service delivery; (iii) make strides toward universal access to electricity; and (iv) reduce gender and disability gaps in the electricity sector.

GENERAL DEVELOPMENT OBJECTIVE

Indicator	Unit of measure	Baseline 2022	Target 2026	Means of verification	Comments
Share of total energy sector greenhouse gas emissions attributable to power generation	%	14.37 (2018)	10.61	MEM analytical report based on the National Energy Balance Sheet and International Renewable Energy Agency methodology.	The target is calculated using a business-as-usual projection with an 11 year horizon.

SPECIFIC DEVELOPMENT OBJECTIVES

Indicator	Unit of measure	Baseline 2022	End of program target 2026	Means of verification	Comments
SPECIFIC OBJECTIVE 1. Support the decarbonization of the energy sector by promoting nonconventional renewable energy sources, new alternative generation sources, energy efficiency and demand management measures, regional integration, and e-mobility					
Renewable energy:					
1.1 Nameplate capacity of renewable energy within the SNI	MW	5,425.72	6,843	Statistics from Ecuador's electricity sector (published regularly by ARCONEL)	
1.2 Share of power generated from renewable energy (nameplate capacity)	Percentage	65.36	71.48	Statistics from Ecuador's electricity sector	
1.3 Nameplate capacity of renewable energy in the Galapagos Islands	MW	8.27	22.26	Statistics from Ecuador's electricity sector	

Indicator	Unit of measure	Baseline 2022	End of program target 2026	Means of verification	Comments
Energy efficiency:					
1.4 Shrimp farm users connected to the grid who have replaced fossil fuels with electricity	Number	0	100	MEM analytical report based on the monitoring of the beneficiary users' electric bills	Sample from studies on electricity and optimization of pump systems to reduce shrimp farms' dependency on fossil fuels
Regional integration:					
1.5 Progress in the implementation of the 500 kV transmission system for electricity exchanges between Ecuador and Peru	Percentage	0	20	Report from the Electricity Corporation of Ecuador (CELEC EP)	This indicator reflects progress in the implementation of Ecuador's 500 kV transmission system. This project will lead to a 500 MW increase in transmission capacity by 2027.
E-mobility:					
1.6 Installation of new electric vehicle charging stations	Number	0	92	MEM report	The target for the second PBP operation was increased.
SPECIFIC OBJECTIVE 2. Increase private sector participation in electricity service delivery					
2.1 Private sector participation in power generation using renewable energy	Percentage	11.12	20.25	Statistics from Ecuador's electricity sector	
2.2 Contracts for renewable energy projects awarded to the private sector through public selection processes	Number	3	13	Notices of award from public selection processes	The target was increased for the second PBP operation
2.3 Amount of private-sector financing for new nonconventional renewable energy in the Galapagos Islands	US$ millions	0	US$32.2	MEM report	Considered as private sector finance once the contract is signed
2.4 Distributed generation capacity for self-supply with private-sector financing	MW	11.08	60	Statistics from Ecuador's electricity sector	
SPECIFIC OBJECTIVE 3. Make strides toward universal access to electricity					
3.1 Households newly connected to electricity, nationwide	Number	0	80,358	Expansion and Quality Plan and MEM report	
3.2 Households newly connected to electricity, in rural and marginalized urban areas	Number	0	25,645	Rural and Marginalized Urban Areas Access Plan and MEM report	

Indicator	Unit of measure	Baseline 2022	End of program target 2026	Means of verification	Comments
SPECIFIC OBJECTIVE 4. Reduce gender and disability gaps in the electricity sector					
4.1 Public electric companies with a gender roadmap establishing gender-inclusive strategies and actions.	Percentage	0	100	MEM report on progress in the development and implementation of action plans	There are 22 companies with action plans including measures addressing technical training for women as line workers; the promotion of women to technical operation positions; training focused on gender, violence prevention, and community engagement; and energy-related training at primary and secondary schools.
4.2 Public electric companies whose facilities are accessible to and include signage for persons with disabilities.	Percentage	10	100	MEM report on progress in the development and implementation of action plans	According to the gender and diversity diagnostic assessments performed at the companies found that CNEL EP Esmeraldas and CNEL EP Guayaquil are the only ones that are accessible and have signage.

OUTPUTS

Indicator	Baseline value (2022)	Target (2024)	Means of verification	Comments
COMPONENT 1. Macroeconomic stability				
Macroeconomic framework consistent with the program objectives and with the guidelines set forth in the sector policy letter	0	1	Independent Assessment of Macroeconomic Conditions (IAMC) valid at the time the disbursement request is submitted	
COMPONENT 2. Support for the decarbonization of the energy sector				
Renewable energy:				
Electricity Master Plan 2023-2032 approved and in effect, incorporating nonconventional renewable energy at a large scale with climate adaptation and resilience criteria. Accompanied by the Contingency Plan to manage deficits in generation in the SNI in 2023 and the SNI Work Plan 2024-2025.	0	2	Electricity Master Plan approved and in effect; and Contingency Plan to manage deficit conditions in generation in the SNI, October 2023	

Indicator	Baseline value (2022)	Target (2024)	Means of verification	Comments
Contracts signed for 714 MW (includes 310 MW for El Aromo and Villonaco) for electricity generation from nonconventional renewable energy sources.	0	13	Contracts signed	
Report on activities executed in the Galapagos Islands associated with actions to incorporate nonconventional renewable energy based on the Energy Transition Plan for the Galapagos Islands 2050.	0	1	Report on activities executed in the Galapagos Islands based on the Energy Transition Plan for the Galapagos Islands 2050.	
New alternative sources:				
Ministerial agreement regarding green hydrogen production and use in Ecuador, the scope of which will be reflected in the country's energy planning mechanisms.	0	1	Ministerial agreement approving the roadmap for green hydrogen production and use	
Regulations for the Energy Competitiveness Act (LOCE) as the first step in the development of a regulatory framework for green hydrogen production and use in Ecuador.	0	1	Regulations for the Energy Competitiveness Act. Supplement 507 - Official Gazette, February 2024	
Energy efficiency:				
Reform of LOCE regulations, including reform of the regulations for the Energy Efficiency Act (LOEE)	0	1	Regulations for the Energy Competitiveness Act. Supplement 507 - Official Gazette, February 2024	
Creation of a fund to promote energy efficiency with the aim of financing plans, programs, projects, and other activities set forth in the laws, plans, programs, and/or other energy efficiency planning instruments, establishing the mechanism to finance the fund.	0	1	Energy Competitiveness Act. Second Supplement 475 - Official Gazette, January 2024	
Ministerial agreement approving the program for the large-scale replacement of air conditioners in the Galapagos Islands. MEM report on the public launch of the program	0	1	Ministerial agreement approving the program. MEM report on the public launch of the program	
National Energy Efficiency Committee resolution on standards for street lamps and transformers, including technical specifications; and labeling for the end use of street lamps	0	1	National Energy Efficiency Committee resolution on standards and labeling, including a prioritized list of equipment for end use	
Resolution approving the national program to promote smart metering. This digitalization program will include supervision, monitoring, and evaluation.	0	1	Resolution approving the national program to promote smart metering	

Indicator	Baseline value (2022)	Target (2024)	Means of verification	Comments
Priority decision issued by the National Planning Bureau approving an energy substitution plan with energy efficiency measures for agribusiness, including public consultations and training for the sector, as well as financing.	0	1	Priority decision issued by the National Planning Bureau	
Resolution by the ELECGALAPAGOS Board of Directors, including resources approved to implement the energy efficiency and demand management measures set out in the Energy Transition Plan for the Galapagos Islands 2050, specifically so that at least 76% of street lighting on the islands consists of LED lamps, and for a progress report.	0	1	Resolution by the ELECGALAPAGOS Board of Directors, including funds for implementation and a progress report	
Regulation to eliminate electricity rate subsidies during night hours for the industrial sector.	0	1	Regulation ARCERNNR-034/2023, November 2023	
Regional integration:				
Decision establishing a transition period to begin the Andean Electricity Market.	0	1	Decision 919, amendment of Decision 816, December 2023	
E-mobility:				
Ministerial agreement with provisions for e-mobility issued by electricity sector institutions, and for electric vehicle charging service issued by electricity distribution companies	0	1	Ministerial Agreement MEM-VEER-2023-0004-AM, August 2023. Official Gazette 393, September 2023	
Resolution updating the fee schedule and charging stations	0	1	Resolution ARCERNNR – 034/2023. Fee schedule for the public electricity service, year 2024. 30 November 2023	
COMPONENT 3. Promotion of private-sector participation in the electricity sector				
Ministerial agreement establishing the comprehensive payment guarantee mechanism to promote private-sector participation in power generation	0	1	Ministerial Agreement 20 of 22 March 2024	
Issuance of the regulatory framework for distributed generation for self-supply by regulated electricity consumers, to promote private investment	0	1	Resolution ARCERNNR – 031/2023.Regulation ARCERNNR – 008/23, November 2023	
Issuance of a new LOCE that includes private sector participation in the electricity sector, as well as incorporating real costs into electricity	0	1	Energy Competitiveness Act. Second Supplement 475 - Official Gazette, January 2024	

Indicator	Baseline value (2022)	Target (2024)	Means of verification	Comments
rates, including those from investment, to make the service more efficient.				
Issuance of the general regulations for the LOCE with reforms of the general regulations for the Public Electricity Service Act (LOSPEE)	0	1	Regulations for the Energy Competitiveness Act. Supplement 507 - Official Gazette, February 2024	
COMPONENT 4. Promotion of universal access to electricity				
Resolution with mechanisms for the delivery and management of electricity services in remote areas, with and without grid extension	0	1	Resolution with mechanisms for the delivery and management of electricity services in remote areas, with and without grid extension	
COMPONENT 5. Promotion of gender and disability equity in the electricity sector				
Resolution with approval and launch of action plans, to include a specific roadmap establishing strategies and actions for the inclusion of women and persons with disabilities at electricity sector institutions	0	1	MEM resolution and activity report	
Report of budgetary allocations to finance the implementation of actions to promote compliance with the Disabilities Act	0	1	Report of budgetary allocations	
Report on activities executed to implement the gender equity actions set out in the Energy Transition Plan for the Galapagos Islands 2050	0	1	Report of activities executed by ELECGALAPAGOS	

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/24

Ecuador. Loan ____/OC-EC to the Republic of Ecuador
Support for the Energy Transition and the Promotion
of Investments in Ecuador's Energy Sector II

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Republic of Ecuador, as borrower, for the purpose of granting it a financing aimed at cooperating in the execution of the project "Support for the Energy Transition and the Promotion of Investments in Ecuador's Energy Sector II". Such financing will be for the amount of up to US$500,000,000, from the resources of the Bank's Ordinary Capital, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on ___ _____ 2024)

LEG/SGO/CAN/EZIDB0000366-263631146-21530
EC-L1293 - OC

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/24

Ecuador. Loan ____/KI-EC to the Republic of Ecuador
Support for the Energy Transition and the Promotion
of Investments in Ecuador's Energy Sector II

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, acting as Administrator of the Korea Infrastructure Development Co-financing Facility for Latin America and the Caribbean (hereinafter, the "Facility") to enter into such contract or contracts as may be necessary with the Republic of Ecuador, as borrower, for the purpose of granting it a financing aimed at cooperating in the execution of the project "Support for the Energy Transition and the Promotion of Investments in Ecuador's Energy Sector II". Such financing will be for the amount of up to US$100,000,000, from the resources of the Facility, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on ___ _____ 2024)

LEG/SGO/CAN/EZIDB0000366-263631146-21529
EC-L1293 - KIF

SUPPORT FOR ENERGY TRANSITION AND PROMOTION OF INVESTMENTS IN THE ENERGY SECTOR OF ECUADOR – II

EC-L1293

CERTIFICATION

The Grants and Co-Financing Management Unit (ORP/GCM) certifies that the referenced operation will be financed through:

Funding Source	Fund Code	Currency	Amount Up to
Korea Infrastructure Development Co - Financing Facility for Latin America and the Caribbean	KIF	USD	100,000,000

For operations financed by funds where the Inter-American Development Bank (IDB) does not control liquidity, the availability of resources is contingent upon the request and the receipt of the resources from the donors. Additionally, in case of operations financed by funds that require a post-approval agreement with the donor, the availability of resources is contingent upon the signature of the agreement between the Donor and the IDB. (i.e.: Project Specific Grants (PSG), Financial Intermediary Funds (FIF), and single donor trust funds).

Certified by: ORIGINAL SIGNED

June 4, 2024 | 12:42 PM EDT

Maria Fernanda Garcia Rincon
Chief
Grants and Co-Financing Management Unit
ORP/GCM

Date