

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

ECUADOR

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

(EC-L1287)

LOAN PROPOSAL

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ABBREVIATIONS

ARCERNNR	Agencia de Regulación y Control de Energía y Recursos Naturales No Renovables [Energy and Nonrenewable Natural Resources Regulation and Control Agency]
FERUM	Fondo Electrificación Rural y Urbano Marginal [Fund for the Electrification of Rural and Marginalized Urban Areas]
IMF	International Monetary Fund
KIF	Korea Infrastructure Development Cofinancing Facility for Latin America and the Caribbean
MEF	Ministry of Economy and Finance
MEM	Ministry of Energy and Mines
NDCs	Nationally Determined Contributions
PBP	Programmatic Policy-based Loan
SDGs	Sustainable Development Goals
SINEA	Sistema de Interconexión Eléctrico Andino [Andean Electrical Interconnection System]
SNI	Sistema Nacional Interconectado [National Interconnected System]
STEM	Science, technology, engineering, and math

PROJECT SUMMARY
ECUADOR
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Financial Terms and Conditions					
Borrower			Flexible Financing Facility ^(a)		KIF ^(b)
Republic of Ecuador			Amortization period:	19 years	15 years
Executing agency			Disbursement period:	1 year	1 year
Ministry of Economy and Finance			Grace period:	7 years ^(c)	3 years
Source	Amount (US\$)	%	Interest rate:	SOFR-based	2.5%
IDB (Ordinary Capital):	450 million	90	Credit fee:	(d)	N/A
Cofinancing (KIF):	50 million	10	Inspection and supervision fee:	(d)	N/A
Total:	500 million	100.00	Front-end fee:	N/A	0.1%
			Weighted average life:	12.75 years	N/A
			Approval currency:	U.S. dollar	
Project at a Glance					
<p>Project 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. The specific objectives are: (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.</p> <p>This operation is the first in a series of two contractually independent but technically linked loans under the programmatic policy-based loan (PBP) modality.</p>					
<p>Special contractual conditions precedent to the first disbursement of the loan. The sole disbursement of the loan proceeds 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).</p>					
<p>Exceptions to Bank policies. None.</p>					
Strategic Alignment					
Challenges: ^(e)	SI <input checked="" type="checkbox"/>		PI <input checked="" type="checkbox"/>		EI <input checked="" type="checkbox"/>
Crosscutting themes: ^(f)	GE <input checked="" type="checkbox"/> and DI <input checked="" type="checkbox"/>		CC <input checked="" type="checkbox"/> and ES <input checked="" type="checkbox"/>		IC <input checked="" type="checkbox"/>

- ^(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 the applicable policies.
- ^(e) SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).
- ^(f) GE (Gender Equality) and DI (Diversity); CC (Climate Change) and ES (Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. DESCRIPTION AND RESULTS MONITORING

A. Background, problem addressed, and rationale

- 1.1 **Macroeconomic context.** Ecuador has made notable progress in strengthening its policy framework, transparency, and fiscal consolidation. In December 2022, the country completed an arrangement with the International Monetary Fund (IMF) for the first time in 20 years, which is one indication of the country's commitment to macroeconomic stability. The government has demonstrated sound fiscal management, achieving a fiscal, primary, and overall surplus of 1.6% of GDP in 2022 and lowering the debt-to-GDP ratio from 55% of GDP in 2022 (within the parameters of the fiscal rule). The country has also implemented effective debt repurchase strategies, generating significant savings. Progress has been made toward integration with global markets through the signing of trade agreements with Costa Rica, Korea, and China, and Ecuador's nontraditional exports have grown (from US\$396 million in 2019 to US\$647 million in 2023). In addition, the financial system is liquid and sound, and international reserves are stable. Nevertheless, there are challenges that should be kept in mind. The country's access to external private debt markets is limited due to its high country risk. The political climate has hindered the implementation of necessary structural reforms. In addition, the country needs external sources of financing due to existing needs in the fiscal accounts, estimated at US\$4.071 billion for 2023. Furthermore, the earthquake and heavy rains that have occurred in 2023 are driving an extraordinary US\$1.600 billion increase in financing needs. The political uncertainty surrounding the presidential and National Assembly elections are compounded by the environmental risks associated with El Niño, which could have an economic impact to the tune of around US\$12 billion.
- 1.2 **The electricity sector transition.** The Ecuadorian government has been promoting a transformation of the electricity sector in line with the Sustainable Development Goals (SDGs) and the United Nations 2030 Agenda.¹ The government ratified its commitment in Executive Decree 371 of 2018,² 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,³ the country submitted its first nationally determined contribution (NDC)⁴ 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 in the energy sector by 2025, as measured against a business-as-usual scenario.⁵ The NDC's three lines of action for the energy sector are: (i) promote the use of nonconventional renewable energy; (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 the action plan for the sector,

¹ [Sustainable Development Goals](#).

² [Executive Decree 371](#).

³ [United Nations Framework Convention on Climate Change](#).

⁴ [First Nationally Determined Contribution](#).

⁵ Includes fossil fuel emissions from the transportation sector.

Ecuador set national mitigation targets: (a) increase power generation capacity from renewable energy sources from 60% to 90% by 2030; (b) increase electricity coverage from 97.41% in 2022⁶ to 97.99% in 2027, in accordance with the Electricity Master Plan 2018-2027;⁷ and (c) increase fuel economy, optimizing electric power generation and energy efficiency. The analysis of climate change and compliance with the Paris Agreement ([optional link 1](#)) analyzes the country's and the operation's alignment with the Paris Agreement mitigation targets (paragraph 1.27).

- 1.3 The Ecuadorian government's National Development Plan, "Creating Opportunities 2021-2025,"⁸ links its targets to the SDGs, emphasizing initiatives that contribute to universal access to electricity, efficient and rational energy use, and diversification of the energy matrix. The plan's objectives include 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 includes the promotion of energy efficiency, regional integration,⁹ updates to the generation plan, public and private investment in nonconventional renewable energy generation and transmission, universal access, and the reduction of gender and disability gaps in the electricity sector.
- 1.4 By adopting "Creating Opportunities 2021-2025," the Ecuadorian government recognizes that: (i) the energy transition toward low-carbon electricity systems requires immediate action through new policies, legal frameworks, management models, and synergies that can channel the potential of the public and private sectors, thus generating sustainable economic development and knowledge transfers throughout the value chain; (ii) the modernization of electricity grids must take into account regulatory issues, transportation, power distribution and communication networks, distributed generation, energy storage, smart metering, distributed control, active demand management, and opportunities to provide new products and services; (iii) the electrification of the automotive and other industries requires that the State promote the development and implementation of policies that make electric vehicle charging—and electrification of the industry generally speaking—viable; and (iv) to meet the sustained growth in demand for energy over the next 10 years anticipated in the Electricity Master Plan 2018-2027, Ecuador needs to increase its installed capacity to ensure 3,200 MW of effective output by 2031.
- 1.5 In the past 15 years, Ecuador has invested over US\$10 billion in public capital in the electricity sector (approximately 9.4% of GDP in 2021) to support the

⁶ According to Ministry of Energy and Mines (MEM) estimates for 2022.

⁷ [Electricity Master Plan 2018-2027](#).

⁸ [Creating Opportunities 2021-2025](#).

⁹ Ecuador predominantly plays the role of electricity exporter in exchanges with Colombia. To strengthen electricity interconnection between Ecuador and Peru, the IDB provided financing for the Ecuadorian section under the "[Ecuador-Peru 500-Kilovolt Electricity Interconnection, Ecuadorian Section](#)" operation (loan [5653/OC-RG](#)), strengthening regional energy integration and promoting the development of the Andean Electrical Interconnection System (SINEA) through a 544 km extra-high voltage transmission line between the two countries.

modernization and upgrading of transmission and distribution systems and the development of new generation works. As a result, the country increased its installed capacity by 68.6%, from 5,181 MW in 2011 to 8,864 MW in 2022. In 2022, 58.5% of capacity was hydropower, 38.6% thermal, and 2.9% nonconventional renewable energy. Thus, the country achieved diversification under the principles of efficiency and environmental sustainability, strengthened sector infrastructure, and went from being a net energy importer to become a net energy exporter at the regional level. According to the 2021 National Energy Balance Sheet,¹⁰ primary energy production in Ecuador is 85.82% from oil, 4.43% from natural gas, 0.78% from firewood, and 8.97% from nonconventional renewable energy (hydropower, sugarcane byproducts, wind power, and biogas). The country exported approximately 68.1% of its oil production. In 2021, 51.2% of energy demand was from the transportation sector, 18.2% from the industrial sector, 14.6% from the residential sector, and 16% from agriculture, fishing, business, services, and other sectors. Peak demand increased by 31.68% between 2013 and 2022, and projections indicate that average power consumption will increase by 2.8% annually in the coming years.

- 1.6 **Reforms toward a just energy transition.** Ecuador's energy transition has been a decisive step toward achieving a clean and efficient electricity sector. Since 2015, Ecuador has implemented major reforms supported by the IDB through programmatic policy-based loans (PBP), investment loans, and technical cooperation operations (paragraph 1.24). The IDB supported this process through the operation "Support for the Transition of the Energy Matrix in Ecuador" (loan [3420/OC-EC](#)), the first loan in a series under the PBP modality, whose second loan was approved in 2020 (loan [5044/OC-EC](#)). That PBP generated valuable progress toward the transformation of the sector, including significant gains under the proposed objectives 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 thanks to 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 (diesel, fuel oil, crude, and waste) decreased from 12.2 million barrels of oil equivalent to 10.6 million barrels of oil 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 83.65%; annual CO₂ emissions decreased from 9.2 tons of CO₂ equivalent to 6.1 tons of CO₂ 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.¹¹

¹⁰ [National Energy Balance Sheet 2021](#).

¹¹ Documented in the project completion reports for loans [3420/OC-EC](#) and [5044/OC-EC](#).

- 1.7 The Electric Utility Act was passed on 16 January 2015, amended on 21 June 2019, and amended again on 6 May 2021. The act regulates the State's fulfillment of its mandate to plan, implement, regulate, control, and administer the public electricity service. Its general regulations were approved in 2019. Based on the identified need to have a regulatory and policy framework in place to expedite progress toward meeting the established targets and commitments and increase private sector participation in electricity service delivery, the Ecuadorian government has decided, as a strategy to increase capacity to meet the sustained demand for service, to steer the country toward a technically, environmentally, socially, and economically sustainable energy transition by strengthening its institutions and human talent, thus rising to the challenges of a new global energy scenario.
- 1.8 The Ecuadorian government formally adopted this strategy by issuing Executive Decree 238 in October 2021,¹² 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, people with disabilities, and low-income communities. The 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.
- 1.9 **The challenges of a just energy transition.** Despite the significant gains made, the country continues to face major challenges. To meet its proposed and committed targets (paragraph 1.2), it must develop actions to facilitate its progress along the path toward a just energy transition. To improve conditions conducive to the transition and ensure that it benefits the entire population, the country needs to step up actions in the following areas: (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 people with disabilities.
- 1.10 **Decarbonize the sector to achieve sector targets for 2030 and the NDC.** To achieve progress toward decarbonization targets and commitments, the team has identified the following areas that require regulatory and policy adjustments to pave the way toward achievement of the objectives of the transition:
- (i) **Increase the share of renewable energy.** In 2022, the share of renewable energy in Ecuador's energy matrix was 65.36%. 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 great potential to increase the share of renewable energy in its energy matrix and reduce the relative use of fossil fuels (34.64% in 2022) using various alternatives. Though this will have a positive impact on reducing the

¹² [Executive Decree 238](#).

use of subsidized fuels, the path to the transition will require a structural strategy for the sector that identifies the actual cost of electricity service delivery and calls for the rational use of energy to incentivize private investment and meet the growing demand for energy. The country has called for continuously increasing its adoption of renewable energy, with an emphasis on large-scale adoption of nonconventional renewable energy driven by climate adaptation and resilience criteria. To achieve this, the country requires medium- and long-term planning for the expansion of electricity generation nationwide, under the framework of a just energy transition, that takes into account conditions for electricity service workers and users and power system sustainability, efficiency, and resilience. The Electricity Master Plan and its first update (2023) include plans to add 6,030.4 MW of power to the National Interconnected System's (SNI) power generation infrastructure between 2023 and 2032, of which 93.4% will be from renewable energy. These projects include small- and large-scale photovoltaic, wind, geothermal, and hydropower technology. The estimated total investment is US\$10.332 billion, US\$8.082 billion (78.2%) of which would be financed by the private sector. In the specific case of the Galapagos Islands (San Cristóbal, Santa Cruz - Baltra, Isabela, and Floreana), the plan for expanding generation as part of the energy transition from 2020 onward exclusively calls for nonconventional renewable energy projects and energy storage systems, for a total value of US\$93.5 million. This ambitious investment plan faces fiscal constraints that the Ecuadorian government hopes to mitigate through increased private sector financing, estimated at US\$33.2 million between 2023 and 2025 (paragraph 1.11). According to its regulatory definition,¹³ distributed generation is a decentralized alternative for power generation from renewable energy sources at a small scale, in which each facility has nominal power of less than 1 MW, is located near consumers, and is directly connected to the distribution network so it can inject any surplus energy not used for self-consumption (by prosumers) into the network. This alternative reduces emissions, the SNI's operating and investment costs, and transmission and distribution losses. Nevertheless, distributed generation has been underutilized in Ecuador (currently 18 MW) due to regulatory constraints that hinder private investment in nonconventional renewable energy. Under the current regulations, the largest barrier for businesses is uncertainty stemming from the lack of regulatory clarity regarding sales prices and the connection allocation mechanism.

- (ii) **Introduce new alternative sources of renewable energy.** Ecuador has resources that offer high potential as alternative sources for clean power generation, such as green hydrogen¹⁴ and the use of solid waste as renewable generation sources. There is a need for technical studies on the resources available in the country, investment needs, and future

¹³ [Regulation ARCERNR-005/21](#).

¹⁴ Platform for the Development of Green Hydrogen in Latin America and the Caribbean, [H2Lac](#).

uses with a view to assessing the scale of this potential and determining whether it is viable. The country also needs a framework of innovation incentives to promote initiatives for the production and use of those sources, thereby expanding the supply of potential opportunities for energy matrix diversification, energy use, employment, and private investment.

- (iii) **Enhance energy efficiency management.** The country has a basic legal framework for promoting energy efficiency consisting of the Energy Efficiency Act, approved in March 2019,¹⁵ and its general regulations, approved in November 2021. This legislation aims to reduce demand for electricity through changes in consumer habits and management. The main challenges to the sector's ability to effectively promote energy efficiency are: (i) a lack of measures and plans specifically designed to induce changes in electricity consumption habits; (ii) the need for a coordinated State strategy to create financial mechanisms with committed resources, so incentives can be offered and energy efficiency measures implemented in high-consumption segments or products; (iii) fossil fuel subsidies that encourage their use, especially in the shrimp sector, which has benefited from premium diesel and #2 diesel prices that are 20%-25%¹⁶ lower than sales prices at terminals since 2005. The elimination of this subsidy must be accompanied by a competitive clean energy substitution plan for these producers; and (iv) the need to revise and update the electricity distribution system's quality and reliability standards that define the indicators used to evaluate the quality of products, technical services, and commercial services. The Energy and Nonrenewable Natural Resource Regulation and Control Agency (ARCERNNR) and the Ministry of Energy and Mines (MEM), in collaboration with distributors, conducted a technical analysis that assessed compliance with the indicators set out in the existing regulations. They identified areas in need of improvements to generate efficiency gains in electricity distribution management.
- (iv) **Promote e-mobility.** The measurement of energy sector greenhouse gas emissions in the NDC includes the transportation sector's fossil fuel emissions, estimated at 51% of total energy sector emissions as of 2021.¹⁷ For that reason, the lines of action for the energy sector include initiatives to develop sustainable transportation (paragraph 1.2). The Energy Efficiency Act, approved in March 2019, and its general regulations stipulate that, beginning in 2025, any new vehicle added to continental Ecuador's urban or inter-city public transportation fleets must be fully electric. As a transition measure, the Energy Efficiency Act stipulates that, for a period of 10 years after its entry into effect,

¹⁵ [Energy Efficiency Act](#).

¹⁶ The exact amount of the subsidy depends on the oil product pricing methodology, which is periodically updated.

¹⁷ MEM estimates based on the 2021 National Energy Balance Sheet (idem).

municipal autonomous decentralized governments must create incentives to promote the use of electric vehicles and facilitate their circulation, implementing such measures as exempting electric vehicles from driving restrictions aimed at mitigating traffic congestion. One obstacle to achieving this goal is a lack of strategically placed charging infrastructure to service the proposed growth. In all, Ecuador has just 485 electric vehicles, 32 charging stations, and 62 public chargers. Only five Ecuadorian cities with over 50,000 inhabitants have charging stations. The number of electric vehicles is projected to reach 10,000 by 2025.¹⁸ 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 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.

- (v) **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 increase 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 is cheaper. 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 816,¹⁹ 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

¹⁸ According to data from [Ecuador's National E-mobility Strategy \(2020-2021\)](#).

¹⁹ [Andean Community Decision 816](#). Regulatory framework for the subregional interconnection of electricity systems and electricity exchanges within the Andean Community, 24 April 2017.

(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. Ecuador is making progress in its infrastructure commitments through the “Ecuador-Peru 500-kilovolt Electricity Interconnection, Ecuadorian Section” operation (loan [5653/OC-RG](#)).

- 1.11 **Increasing private sector participation in the electricity sector.** The existing legal framework is generally open to private sector participation in electricity service delivery in the generation and transmission segments through public selection processes, which means there is significant potential for business opportunities in the sector. Power generation is the segment with the most potential for private initiatives given the private sector’s technological knowledge and experience, the country’s available resources, and the costs. The Electricity Master Plan indicates that private enterprise could be responsible for the execution of 88.5% of new generation projects in the SNI (5,339.6 MW), while most of the nonconventional renewable energy projects and storage systems in the Galapagos Islands are expected to be executed by the private sector (paragraph 1.10(i)). However, there are administrative and technical regulatory barriers that limit or hinder the private sector’s ability to turn a profit, given the lack of assurances or financial incentives to make private sector participation a reality. The Ecuadorian government recognizes the potential benefits of private financing in terms of lower opportunity costs in the use of fiscal resources, the potential for swift and nimble investments, employment gains, and overall economic growth. Therefore, the government has determined that it needs to strengthen the policy, regulatory, and strategic framework for facilitating procurement systems and modalities, its methodology for setting sales prices, its payment guarantee arrangements, and, more broadly, its incentives for attracting, enabling, and retaining private investments in such areas as: expansion of electricity service delivery within the SNI and through distributed generation, development and application of technology and expertise in the electricity supply chain, new alternative renewable generation sources; and electric vehicles and charging stations ([optional link 4](#)).
- 1.12 **Achieving universal access to electricity.** To ensure that the entire population benefits from the just energy transition, 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. The FERUM’s specific objective is to provide access to electricity in Ecuador. An analysis of the FERUM’s impact²⁰ 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 97.41% in 2022. The Ecuadorian

²⁰ Jiménez, R. (2018). [Impact evaluation report](#). Program for the Electrification of Rural and Marginalized Urban Areas (FERUM). Inter-American Development Bank.

government's objective is to increase the coverage rate until universal access is achieved in 2030. Current estimates indicate that approximately 150,000 households lack access to electricity.²¹ 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. The Ecuadorian government needs guidelines and policies that will enable it to tackle the challenge of meeting the needs of the remainder of the population in a way that is technically, environmentally, and economically viable.

- 1.13 **Promoting gender equality and diversity in the electricity sector.** Women face barriers that limit their access and ability to retain jobs in the sector. Access barriers include cultural and social norms, perceived gender roles, the low numbers of women in the academic fields of science, technology, engineering, and math (STEM), a lack of information regarding employment opportunities, and workplace policies that discourage women's participation in the industry. The most significant barriers to job retention and career advancement are the lack of flexibility in the workplace, the lack of training opportunities, the lack of childcare facilities, and the lack of job-sharing policies in the workplace.²² In Latin America, women hold only 32% of jobs in the renewable energy sector, and most of those women hold administrative positions (women hold 28% of STEM positions, 35% of non-STEM technical positions, and 45% of administrative positions).²³ As discussed in the analysis of gender and disability in the electricity sector ([optional link 3](#)), the evidence from Ecuador reveals that the share of women at electricity sector companies is below average for the region, since only 21% of electricity company employees are women. Women in administrative positions account for 15% of that figure, while just 5% corresponds to women who hold operational or technical positions as supervisors of infrastructure, network maintenance, energy control, system support and configuration, electrical facilities, or control centers. At the 22 public electric companies analyzed by the team, only one woman holds a line position (live line, overhead lines, or underground networks).
- 1.14 To correct this situation, the Ecuadorian government has identified the need to promote the development and implementation of an institutional gender plan in the electricity sector. At the regional level, it has been documented that a considerable number of large companies in the sector have gender plans,²⁴ which are a useful tool for companies to adopt gender actions aimed at supporting women's access to the industry and career advancement within it. The IDB's experience with gender parity initiatives has also shown that developing company-level action plans and establishing public-private work plans are innovative methods to promote changes in gender norms and foster the economic development of women in predominantly male industries. The Bank has supported similar actions at the subnational²⁵ and

²¹ According to MEM estimates based on data from the National Institute of Statistics and Censuses (INEC), 2022.

²² International Renewable Energy Agency (2019), [Renewable Energy: A Gender Perspective](#); and Beaujon, A., D. López, and F. Méndez (2022), [Género y Energía en Argentina](#). BID.

²³ Idem. International Renewable Energy Agency (2019), op. cit.

²⁴ Beaujon, A., D. López, and F. Méndez (2022), op. cit.

²⁵ Energy Transition Plan for the Galapagos Islands (in preparation).

national²⁶ level that set a direct precedent and example for the Ecuadorian government's efforts in this area.

- 1.15 Persons with disabilities. Since 2012, Ecuador has a Disabilities Act²⁷ that ratifies the country's commitment to this population pursuant to Article 48 of the Ecuadorian Constitution, which enshrines the inclusion of persons with disabilities in the public and private spheres. Article 3 of the Disabilities Act states that measures must be taken to ensure the social inclusion of persons with disabilities as well as the elimination of the physical, attitudinal, social, and communication barriers affecting them. Article 47 of the Disabilities Act on the inclusion of persons with disabilities in the workplace states that all public and private employers with 25 or more employees must hire persons with disabilities to fill a minimum of 4% of permanent positions suited to their knowledge base, physical abilities, and individual aptitudes in pursuit of the principles of gender equity and disability diversity.²⁸ In the case of public electricity companies, the diagnostic assessment performed by the project team ([optional link 3](#)) found that all 22 companies analyzed have persons with disabilities on staff. However, only five companies come close to meeting the quota established by the Disabilities Act. The assessment also found that, due to budgetary allocations, only two companies comply with accessible infrastructure and signage requirements. The MEM recognizes the importance of promoting actions to achieve compliance with the Disabilities Act and increase the inclusion of persons with disabilities in the sector, and it has committed to a just energy transition with equality of opportunities and access.
- 1.16 **Proposed intervention and rationale.** 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 give continuity to its policy actions, regulatory measures, and sector reforms. The Ecuadorian government asked the IDB for technical and financial support to develop this PBP, "Support for the Energy Transition and the Promotion of Investments in Ecuador's Energy Sector." The PBP locks in the results achieved in the just transition already underway (paragraph 1.6), maintaining a sequential logic in the medium- and long-term policy measures to support the fulfillment of forward-looking commitments aimed at achieving a low-carbon, climate resilient energy sector that benefits Ecuadorian society as a whole.
- 1.17 Ecuador requires significant investments so it can realize its potential in terms of incorporating renewable energy in its energy matrix and quickly harness alternative sources of nonconventional renewable energy, but those investments are limited by fiscal constraints. To increase its capacity to meet the population's electricity

²⁶ [Nexo Mujer y Energía de Panamá](#) (2022) is working on 10 strategic pillars with specific actions: 1. Awareness-raising, education, training and capacity-building, technological innovation, and business models; 2. Professional performance and development opportunities; 3. Recruitment and hiring; 4. Equality and remuneration; 5. Prevention of workplace harassment; 6. Enabling a balance between work, family, and social life; 7. Cultural and social norms; 8. Access to energy services; 9. Transition technology dissemination and buy-in; and 10. Pilot and demonstration projects.

²⁷ [Disabilities Act](#).

²⁸ [Idem](#) (page 13).

needs under this strategy and fulfill its commitments in a timely manner, the Ecuadorian government recognizes the importance of creating and facilitating channels for private sector financing. The mechanisms for pursuing this objective are presented in the Policy Matrix for the first and second operations in the programmatic series and take the form of amendments to the existing Electric Utility Act regulations as well as new regulations for electricity service delivery that shape private sector participation.

- 1.18 The program formulates specific proposals for closing gaps in the just energy transition through: (i) national macroeconomic stability; (ii) strides toward the incorporation of renewable energy in the energy matrix; (iii) the promotion of new, high-potential alternative generation sources; (iv) a strategy to implement a policy to promote energy efficiency that is consistent with the resources available; (v) a mechanism for coordinating dispatch with members of the Andean Electricity Market; (vi) a regulatory framework for electric vehicles and charging stations; (vii) a regulatory framework to attract private sector participation to the sector; (viii) policies to achieve universal access to electricity by 2030, in line with the SDGs; and (ix) a strategy to promote gender equality and support for persons with disabilities in the electricity sector.
- 1.19 At this stage of the PBP, the team identified the most important gaps so the Ecuadorian government can fulfill its international and national commitments by 2025 and stay on track to meet the 2030 targets. Agreements were reached on measures that are economically and politically viable at this time as well as on the sequential and monitoring measures that will be introduced in the second programmatic operation, which is slated to be designed and approved in 2025. Development of the second operation will continue to focus on working toward achievement of the 2030 agendas and will identify additional gaps visible at that time. For both loans, the outcomes are expected to be achieved 24 months after the implementation of the policy conditions (2027) (according to the Bank's principles and guidelines for the final evaluation of PBPs).
- 1.20 The progress anticipated under this PBP notwithstanding, inevitably in 2027 there will still be gaps that will need to be closed to achieve the targets set forth in the 2030 Agenda for Sustainable Development in connection with the SDGs. More specifically, progress will likely still need to be made in terms of energy efficiency gains; working toward universal access to electricity; and greater opportunities for private sector participation in the electricity service chain. The Bank will continue to provide timely support, in the form of investment loans or policy-based loans, as appropriate, to help the country achieve its established commitments and address any relevant issues that may emerge in the sector.
- 1.21 The IDB's involvement as a strategic partner is necessary so the country can continue to make headway in the policy reform process, as the Bank's involvement promotes dialogue, analysis, and awareness of the measures taken to achieve the objectives, gets new actors and investments involved, and relieves pressure on the country's fiscal constraints.

- 1.22 **Effectiveness of sector policy reforms.** According to the Organisation for Economic Co-operation and Development,²⁹ regulatory reforms complement fiscal and monetary policies by creating the right conditions for sustainable development. Likewise, a report by the National Conference of State Legislatures³⁰ 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. In “From Structures to Services,”³¹ the IDB presents an analysis of infrastructure in Latin America and the Caribbean and the policy reforms that are required to improve the region’s infrastructure services. It recommends that the countries of the region address these challenges by implementing such measures as strengthening regulatory frameworks, promoting competition, and increasing access to energy services. Furthermore, the project completion report for the operation “Support to the Institutional and Operational Strengthening of the Energy Sector III” (loan [2848/OC-SU](#)) concludes that PBP operations are well suited to supporting sector reforms with multiple actors and that the primary beneficiaries of such interventions are the end users, who benefit from a diversified and sustainable energy supply.
- 1.23 The evidence has shown that sector policies are essential to improving the performance of the electricity sector, and that sector policy reforms can lead to increased investment and better service quality by improving the sector’s efficiency and financial sustainability. This report³² published by the IDB gives an estimate of the macroeconomic impact of the energy reform in Ecuador. The study indicates that energy reform reduces the burden of fuel subsidies and oil imports and leads to better public finances and a stronger trade balance. In addition, the impact evaluation report prepared for the Electrification Program for Rural and Marginal Urban Areas II (loan [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.”
- 1.24 **The Bank’s experience and lessons learned.** The IDB has extensive knowledge and experience in climate change and in the sustainable development of the energy sector in the region, especially from its recent operations supporting energy transitions through PBPs and/or investment loans in such countries as Ecuador (loans [3420/OC-EC](#) and [5044/OC-EC](#)) (paragraph 1.6), Argentina (loan [5564/OC-AR](#)), Chile (loan [5548/OC-CH](#)), Colombia (loan [5459/OC-CO-DE](#)), and Uruguay (loan [5680/OC-UR](#)). Since 2010, the Bank has provided a total of US\$1,954,100,000³³ in financing and approximately US\$10 million in technical cooperation assistance for this sector in Ecuador. The energy portfolio in execution includes six investment loans facilitating the expansion, upgrade, and

²⁹ [Recommendation of the Council on Regulatory Policy and Governance, Organisation for Economic Co-operation and Development, 2012.](#)

³⁰ [National Conference of State Legislatures, 2019.](#) Regulatory policies and approaches that can enable grid modernization include: (i) renewable energy portfolio standards; (ii) the establishment of energy storage targets and mandates; and (iii) net metering.

³¹ [IDB, 2020.](#)

³² [Carrillo et al, 2018.](#)

³³ Includes IDB-financed investment operations and policy-based loans.

modernization of the electricity system and improving electricity service coverage, quality, and reliability indicators in Ecuador. The energy transformation is supported by the technical cooperation operation “Support Ecuador’s Energy Transition” (operation [ATN/OC-19248-EC](#)). The loan operation “Support for the Advancement of the Energy Matrix Transition in Ecuador” (loan [4343/OC-EC](#)) calls for the development of a strategy to mainstream gender and diversity in the sector, including the preparation of an action plan to decrease the sector’s inequality gap. The lessons learned from these operations point to the need to continually strengthen execution units that are leading programs with policy actions under their purview as well as to the need to support energy sector investments to ensure that the necessary infrastructure is in place to meet growing demand. The experience from execution of the two PBP loans (paragraph 1.6) underscores important lessons learned that have informed the design of this program to ensure that the instrument will effectively support sector reforms. The lessons learned identified in the project completion report³⁴ include: (i) PBPs are instruments well-suited to support sector reforms with multiple actors and the primary beneficiaries of such interventions are the end users, who benefit from a diversified and sustainable energy supply; (ii) it is essential that the participating institutions can carry out their functions autonomously. To that end, this program identifies and engages the institutions responsible for meeting each policy condition; (iii) policy measures should be gradual and have clear timelines. To that end, this program established progress monitoring and tracking practices for following up on the conditions, including the Bank’s ongoing support; (iv) private sector involvement is important, and the incentive of a financial return is a prerequisite to achieving it. This issue is relevant to the PBP and part of its objectives; (v) the Bank should support the reform process with technical cooperation operations. In this case, the Bank expects to approve a technical cooperation operation to support the energy transition and strengthen Ecuador’s electricity sector companies; and (vi) there are challenges in the ongoing reform process that must be addressed in the short and medium term. In this sense, this PBP points up the active role institutions play in carrying out the necessary reforms within the established timeframes. This is the case for the conditions of the first programmatic operation.

- 1.25 The IDB incorporates its knowledge and experience into PBP design to support the proposed objectives (paragraph 1.6). In this particular case, the Bank stresses the importance of political compromise to ensure the success of the reforms; ongoing technical support for the Ecuadorian government through technical cooperation assistance and expert dialogue; support for new technologies and the country’s information capabilities; and a vision for a just transition that will benefit the entire population.
- 1.26 **Strategic alignment.** The operation is aligned with the second Update to the Institutional Strategy (document AB-3190-2) and with the following challenges: (i) productivity and innovation, by promoting new technologies in the energy sector and the digitalization of the electricity sector; (ii) social inclusion and equality, by promoting universal access to electricity; and (iii) economic integration, by promoting regulatory harmonization to facilitate electricity exchanges between the

³⁴ Project completion reports for loans [3420/OC-EC](#) and [5044/OC-EC](#), op. cit. page 46.

- Andean countries. The operation is also aligned with the crosscutting themes: (i) climate change and environmental sustainability, by contributing to sector resilience, sustainability and/or emission reductions; (ii) gender equality and diversity, with measures promoting gender equality through a strategy to close gender and disability gaps in the sector; and (iii) institutional capacity and rule of law, by developing action plans with strategies and actions that are gender-inclusive and promote the inclusion of persons with disabilities at electricity sector institutions. This operation also aligns with the Corporate Results Framework 2020-2023 (document GN-2727-12) and contributes to the following indicators: (i) number of households with improved access to energy services; (ii) number of regional integration agreements and cooperation initiatives supported; (iii) number of women beneficiaries of economic empowerment initiatives; (iv) emissions avoided (annual tons of CO₂ equivalent); and (v) installed power generation capacity from renewable sources. The operation is consistent with the Employment Action Framework with Gender Perspective (Operational Policy OP-2289-1; document 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-2835-10) 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 CO₂ mitigation. All told, 77.78% of the operation proceeds are invested in climate change mitigation activities, according to the [joint methodology of the multilateral development banks](#), thus contributing to the IDB's climate financing target of 30% of approvals by volume each year.
- 1.27 **Compliance with the Paris Agreement.** The operation has been analyzed using the joint multilateral development bank assessment framework for Paris Agreement alignment and the IDB Group's Paris Alignment Implementation Approach (document GN-3142-1). The analysis found that the operation is: (i) aligned with the Paris Agreement's adaptation target; and (ii) universally aligned with the Paris Agreement's mitigation target ([optional link 1](#)).
- 1.28 **The Bank's country strategy.** 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) strengthen the regulatory frameworks that facilitate private investment; (ii) expand the coverage and quality of physical and technological infrastructure; and (iii) expand access to and improve 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, which the operation hopes will be a means to tip the energy balance sheet further toward renewable energy and carry out climate change resilient investments with minimal greenhouse gas emissions; and (ii) strengthening of social progress, with emphasis on reducing gender gaps.
- 1.29 **Alignment with the Public Utilities Policy.** The program is aligned with the objectives of the IDB Public Utilities Policy (document GN-2716-6) ([optional link 2](#)). It complies with this policy's principles, as the implemented measures promote: (i) access to and the increased efficiency and quality of public utilities, by

promoting universal access to these services and increasing their efficiency and quality; (ii) improvements in electricity service governance through enhanced integrity and transparency in transactions and private sector participation, reduced subsidies, efficiency gains in resource use, and energy savings; and (iii) financial sustainability, by relieving the strain on fiscal resources; environmental sustainability, by fostering the incorporation of renewable energy and actions to reduce CO₂ emissions in the energy sector; social sustainability, by promoting gender equity and the equity of persons with disabilities in the sector, as well as universal access to electricity; and economic sustainability, by ensuring that the reform's anticipated outcomes yield a positive economic return. Moreover, in compliance with the conditions stipulated in Section IV of document GN-2716-6, cost-benefit and cost-effectiveness estimates have been prepared for the proposed PBP's policy reforms, as well as a financial sustainability analysis. These are discussed in [optional link 2](#).

B. Objectives, components, and cost

- 1.30 **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: (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.
- 1.31 **Component 1. Macroeconomic stability.** This component seeks to ensure that the country maintains an economic framework conducive to achievement of the program objectives and consistent with the sector policy letter guidelines.
- 1.32 **Component 2. Support for the decarbonization of the energy sector.** This component supports: (i) increases in the share of renewable energy in the energy matrix, through: approval of the Diversified Electricity Matrix/Generation Expansion Plan in the new context of the nationwide just energy transition; publication of the findings of the evaluation of the Nonconventional Renewable Energies Block projects (500 MW) recommended for contract award, with 461 MW involving the private sector; and approval of the Energy Transition Plan for the Galapagos Islands 2050 incorporating nonconventional renewable energy; (ii) the adoption of policies promoting green hydrogen and solid waste as fuels for the energy transition, through: establishment of policy guidelines to develop green hydrogen as a vehicle for stimulating the transition of the electricity matrix and boosting the energy transition, with the resulting decrease in the use of polluting liquid fuels; the commissioning of a viability study for green hydrogen production and use in the country, which will be used to facilitate development of a roadmap; and regulations for power generation from non-hazardous municipal solid waste; (iii) the preparation of a strategy for implementing a coherent policy for promoting energy efficiency, through: the establishment of policy guidelines for the electricity sector as well as specific guidelines to promote energy efficiency in all consumption sectors through improved energy management, good practices, and technological innovation; elimination of fossil fuel subsidies in the shrimp sector for farms with

- more than 30 productive hectares,³⁵ complemented by an energy substitution plan; approval of the Energy Transition Plan for the Galapagos Islands 2050, including demand management and energy efficiency measures; and regulation of service quality for electricity distribution and sales to make service delivery more efficient; (iv) the development of a mechanism for coordinating dispatch with Andean Regional Electricity Market members, through issuance, by ARCERNNR, of a technical endorsement of the proposed regulatory harmonization reform of the market and submission to the MEM thereof, with a view to ensuring optimal economic conditions for commercial transactions between member countries; and (v) the development of a regulatory framework for electric vehicles and charging stations, through a resolution approving the issuance of a schedule of low- and medium-voltage rates with hourly demand metering for electric vehicles.
- 1.33 Under the framework of the Bank's support for the Ecuadorian government, and through an analysis of cost efficiency in the electricity service delivery chain and the incentives already in place in the country to promote private investment to further strengthen activities to promote rational energy use, the second programmatic operation will call for the following measures: (i) updated generation expansion plans that incorporate nonconventional renewable energy at a large scale, with climate adaptation and resilience criteria, to cover any remaining gaps in commitments and goals; (ii) development of a roadmap for green hydrogen production and use, the scope of which will be reflected in the country's energy planning mechanisms, and development of the corresponding regulatory framework; (iii) an updated energy efficiency plan, the creation and financing of a fund to promote energy efficiency, specific energy efficiency plans such as the launch of a program for the large-scale replacement of air conditioners in the country's coastal and eastern regions, standards and labeling indicating the end use of equipment, expanded use of smart meters, and an energy substitution plan with energy efficiency measures for the shrimp industry; (iv) approval of the regulatory harmonization proposal for the Andean Electricity Market; and (v) 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.
- 1.34 **Component 3. Promotion of private sector participation in Ecuador's electricity sector.** This component seeks to develop a consistent regulatory framework that will open viable new channels to stimulate private sector participation in electricity service delivery that promotes steps toward rational energy use and the analysis of cost efficiency in Ecuador to incentivize private investment. It supports: (i) the approval of new general regulations for the Electric Utility Act that incentivize and facilitate increased private sector participation in delivery of electricity services within the SNI under various management models, such as public-private partnerships, strategic partnerships, and similar arrangements; (ii) submission to ARCERNNR's board of directors of the regulatory framework for distributed generation for the self-supply of regulated and unregulated electricity consumers, to help incentivize private investment; and

³⁵ The regulation classifies shrimp farms with fewer than 30 hectares as small-scale, artisanal businesses. Their fuel consumption is considered equivalent to that of a household.

- (iii) the approval of the commercial transaction system for the electricity sector, to increase transparency in sector operations.
- 1.35 The second programmatic operation introduces an instrument under which the Ecuadorian government can guarantee stability and payment obligations for private service providers, through the establishment of a trust to support power generation transactions under the purview of private operators.
- 1.36 **Component 4. Promotion of universal access to electricity in Ecuador.** This component promotes policies to achieve universal access to electricity by 2030, in line with the SDGs and the just energy transition, through the establishment of policies and guidelines to promote safe, quality, and affordable access to electricity for all sectors of society, achieving universal access to electricity in Ecuador by 2030. To this end, it promotes an investment plan for the expansion of electricity coverage.
- 1.37 The second programmatic operation will call for the approval and financing of a specific investment plan for the SNI and for remote areas, as well as the approval of regulations for arrangements for delivering and managing electricity services in remote areas, including interoperability with the SNI.
- 1.38 **Component 5. Promotion of gender equity and disability equity in the electricity sector.** This component will promote the creation of an institutional gender strategy and action plan for the electricity sector through the approval of guidelines for the development and implementation of gender inclusive strategies in the sector, with action plans that include support for persons with disabilities, and the approval of the gender equity plan for the Galapagos electricity sector as part of the Energy Transition Plan for the Galapagos Islands 2050.
- 1.39 The action plans addressed by those guidelines will be adopted at 22 public electric companies to create more attractive working environments for women's development, thus facilitating their integration in the sector workforce and job retention. The plans will include: (i) interventions to improve employment access, job retention, and career advancement for women in the sector; (ii) technical trainings specifically designed to close gender-related skill gaps and improve career opportunities for women in operations positions; (iii) long-term training and outreach to bring women into STEM fields. The measures to be implemented will include quotas for women in electricity-sector-related technical degree programs, talks in schools to motivate girls, and internships at sector companies for women pursuing degree programs in engineering; (iv) actions aimed at changing workplace practices to close gaps in women's employment access and retention: creation of job profiles with a gender focus, inclusive communication policies, creation of gender committees, a review of company codes of conduct, the establishment of workplace lactation rooms and daycares; and (v) actions targeting employee retention and career advancement, such as the development of policies for promoting women to leadership positions in the sector, as well as leadership, empowerment, and business skills training for women.
- 1.40 The action plans for the 22 public companies will include interventions to reduce gaps currently affecting persons with disabilities and improve compliance with the Disabilities Act. In particular, the plans will promote training and awareness-raising activities on the Disabilities Act for all staff, infrastructure accommodations in the

workplace and at offices serving the external public at all companies, the installation of signage for all types of disabilities, and the improvement of the chatbot³⁶ to increase its accessibility and use by persons with disabilities.

- 1.41 The second programmatic operation will call for: (i) the approval of the action plans with a specific roadmap establishing strategies and actions for the inclusion of women and persons with disabilities at electricity sector institutions; and (ii) budgetary allocations to finance the implementation of actions to promote compliance with the Disabilities Act.

C. Key results indicators

- 1.42 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
<u>General objective</u> : 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.
<u>Specific objective 1</u> : Support the decarbonization of the energy sector.	<p>1.1 Nameplate capacity of renewable energy power generation within the SNI, increased.</p> <p>1.2 Share of power generated from renewable energy, increased.</p> <p>1.3 Nameplate capacity of renewable energy power generation in the Galapagos Islands, increased.</p> <p>1.4 Number of shrimp farm users connected to the grid who have replaced fossil fuels with electricity, increased.</p> <p>1.5 Progress in the implementation of the 500 KV transmission system for electricity exchanges between Ecuador and Peru.</p> <p>1.6 New electric vehicle charging stations installed.</p>
<u>Specific objective 2</u> : Increase private sector participation in electricity service delivery.	<p>2.1 Private sector participation in power generation using renewable energy, increased.</p> <p>2.2 Contracts for renewable energy projects awarded through public selection processes.</p> <p>2.3 New nonconventional renewable energy involving private sector financing in the Galapagos Islands.</p> <p>2.4 Distributed generation capacity for self-supply, increased.</p>
<u>Specific objective 3</u> : Make strides toward universal access to electricity.	<p>3.1 Households newly connected to electricity, nationwide.</p> <p>3.2 Households newly connected to electricity, in rural and marginalized urban areas.</p>
<u>Specific objective 4</u> : Reduce gender and disability gaps in the electricity sector.	<p>4.1 Public electric companies with a roadmap establishing gender inclusive strategies and actions.</p> <p>4.2 Public electric companies whose facilities are accessible to and include signage for persons with disabilities.</p>

³⁶ A computer program that uses artificial intelligence and natural language processing to simulate human conversation.

- 1.43 **Beneficiaries.** 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, distributed generation,³⁷ 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 electricity sector and cuts to fossil fuel subsidies will free up fiscal resources for other programs and/or sectors under the government's plan that have low financial returns but high socio-economic benefits for lower-income groups in particular as well as for the country as a whole, thus extending the benefits of the just energy transition.

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financing instruments

- 2.1 This operation is the first in a series of two contractually independent but technically linked loans under the programmatic policy-based loan (PBP) modality, pursuant to the guidelines and directives established in "Policy-based Loans: Guidelines for Preparation and Implementation" (document CS-3633-2). This PBP is justified by: (i) the strategic relevance of the measures being promoted; (ii) the need for continuity and consistency in the just transition of the electricity sector; (iii) the need for flexibility to adapt to changing experiences and circumstances; (iv) the complex nature of the preparatory and monitoring work; and (v) the IDB's close support for the sector through technical dialogue.
- 2.2 The financing for the first operation amounts to US\$450 million from the IDB's Ordinary Capital with US\$50 million in cofinancing from KIF resources³⁸ administered by the Bank. Pursuant to paragraph 3.27(b) of document CS-3633-2, the loan amount is based on the country's broad fiscal needs. The operation would amount to 12.28% of the Ecuadorian government's projected financing needs for 2023 (US\$4.071 billion) and 2.43% of Ecuador's cumulative GDP as of the third quarter of 2022. The preparation and approval of the second programmatic operation is slated for 2025.

³⁷ The MEM expects that the new regulations will attract investment to increase distributed generation capacity from 18 MW in 2022 to 60 MW in 2025, with potential for continued growth.

³⁸ KIF: Korea Infrastructure Development Cofinancing Facility for Latin America and the Caribbean.

B. Environmental and social risks

- 2.3 This PBP operation is not expected to have significant direct negative effects on the environment or the country's natural resources. Therefore, it is excluded from the scope of the IDB's Environmental and Social Policy Framework, pursuant to the provisions of paragraph 4.7 of that document.

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 the country has the requisite financial management and control tools in place for this purpose. The financing does not involve any procurements.

D. Other key issues and risks

- 2.5 The team has identified a medium-high internal process risk relating to the counterparts' institutional, administrative, and technical capacity for executing the policies proposed under the program, which could create delays in fulfillment of the commitments set out in the Policy Matrix for the second programmatic operation. To mitigate this risk, the Bank will work with the MEM and MEF to establish inter-agency coordination and monitoring actions for work carried out with the public sector agencies involved in the various components of the second programmatic operation.
- 2.6 The team has identified a medium-high risk associated with the implementation environment for the second operation related to the potential changes in national government authorities, in light of the ongoing election process. The first round of elections will take place on 20 August 2023; the second round, if necessary, will take place on 15 October 2023; and the incoming authorities will be sworn into office on 30 November 2023, pursuant to the rules established by the National Electoral Council.³⁹ This could jeopardize the fulfillment of the policy conditions for the second programmatic operation. This risk will be mitigated by the fact that all the policy measures proposed for the second programmatic operation are being supported by the Bank, including the triggers for the second operation, with efforts being made to find channels of high-level technical dialogue to continue deepening the just energy transition and achievement of key program milestones. 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 (loans [3494/OC-EC](#), [3710/OC-EC](#), [3906/OC-EC](#), [4343/OC-EC](#); [4600/OC-EC](#), and [4989/OC-EC](#)) (paragraphs 1.6 and 1.24).
- 2.7 **Sustainability.** The sustainability of the reforms under the PBP is grounded in the Ecuadorian government's commitment to a just and clean energy transition as outlined in paragraphs 1.2 through 1.8. The commitment to move forward in the transformation of 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 plans⁴⁰ reiterated this commitment with objectives aimed at implementing climate change mitigation and adaptation measures. In 2015 the

³⁹ [Resolution PLE-CNE-6-23-5-2023. Electoral Calendar.](#)

⁴⁰ [Plan Nacional del Buen Vivir 2013-2017](#) and [Plan Nacional del Buen Vivir 2017-2021.](#)

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.⁴¹ As indicated in paragraph 1.24, the Bank has provided a total of US\$1,954,100,000 in financing and approximately US\$10 million in technical cooperation assistance to Ecuador's electricity sector since 2010. The Ecuadorian government has firmly supported the actions promoted by this programmatic series and is not expected to incur any additional costs in carrying out these actions, which underscores its commitment to the country's fiscal stability. The sustainability of the reforms is strengthened by: (i) the fulfillment of the reforms proposed for this first operation and (ii) the policy letter, through which the Ecuadorian government commits to fulfilling the policy measures proposed in this PBP. Furthermore, once the policy measures proposed in this PBP series are in effect, the Bank will be able to support the Ecuadorian government with the financing needs for the electricity sector investments that will help consolidate the proposed objectives.

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. To this end, the MEM will ensure timely fulfillment of the agreed measures that fall under the purview of electricity sector entities.
- 3.2 **Special contractual conditions precedent to the first and only disbursement of the loan: Disbursement is 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 The team has prepared a detailed monitoring and evaluation plan ([required link 3](#)) outlining the program's monitoring tools. Fulfillment of the disbursement conditions and output indicators will be determined by verifying the information in the Means of Verification Matrix ([required link 2](#)). This matrix specifies the measures to be implemented under the program and the agency responsible for their execution. The expected outcomes of these measures are presented in the Results Matrix (Annex III), which includes outcome indicators and their baselines and targets, consistent with the policy reform process agreed in the Policy Matrix (Annex II).
- 3.4 **Evaluation.** Upon execution of the second operation, a final evaluation of the program outcomes will be performed through a project completion report. The

⁴¹ [Executive Decree 371](#).

evaluation strategy will be based on the central and non-central criteria established in the IDB's principles and guidelines for the preparation of project completion reports.⁴² The evaluation will determine and measure the program outcomes in terms of the relevance of program design, the effectiveness of the program measures in the achievement of the proposed goals, the sustainability of the program measures in support of the country's energy transition, and the Bank's and the executing agency's performance. An ex post cost-benefit analysis will be performed following the same methodology used for the [ex ante cost-benefit analysis](#). The evaluation will cover the results of the entire series (the first and second operations in the programmatic series). The Energy Division will prepare the project completion report within 24 months after the closing of the second programmatic operation, or within 24 months of disbursement of the first programmatic operation in the event the decision is made to not proceed with the second operation, in accordance with the Bank's guidelines.

IV. POLICY LETTER

- 4.1 The policy letter ([required link 1](#)) affirms the Government of Ecuador'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 that the Government of Ecuador and the Bank have agreed to for this programmatic operation.

⁴² [Project Completion Report: Principles and Guidelines](#) (Annex 1 of Operational Policy OP-1696-5).

Development Effectiveness Matrix		
Summary		EC-L1287
I. Corporate and Country Priorities		
Section 1. IDB Group Strategic Priorities and CRF Indicators		
Development Challenges & Cross-cutting Issues	<div>-Social Inclusion and Equality</div> <div>-Productivity and Innovation</div> <div>-Economic Integration</div> <div>-Gender Equality and Diversity</div> <div>-Climate Change</div> <div>-Institutional Capacity and the Rule of Law</div>	
CRF Level 2 Indicators: IDB Group Contributions to Development Results	<div>-Households with improved access to energy services (#)</div> <div>-Regional integration agreements and cooperation initiatives supported (#)</div> <div>-Emissions avoided (annual tons CO2 equivalent)</div> <div>-Installed power generation capacity from renewable sources (MW)</div>	
2. Country Development Objectives		
Country Strategy Results Matrix	GN-3103-1	(i) Strengthen regulatory frameworks that enable private investment. (ii) Expand coverage and quality of physical infrastructure and technology. (iii) Improve access and coverage of social and basic services.
Country Program Results Matrix	GN-3154-1	The intervention is included in the 2023 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		
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		
5.1 Monitoring Mechanisms	1.7	
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)	Yes	Financial Management: 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

The general objective of the program is to support the efforts of the Government of Ecuador (GoE) towards a just energy transition, promoting public and private investment. The specific objectives are: (i) to support the decarbonization of the energy sector by promoting unconventional Renewable Energy Sources, new alternative sources of generation, energy efficiency measures and demand management, regional integration, and electric mobility; (ii) to increase private participation in the provision of electricity services; (iii) to advance universal access to electricity; and (iv) to reduce the gender and people with disabilities (PWD) gaps in the electricity sector. This operation is the first in a series of a Policy-Based Program (PBP), consisting of two contractually independent but technically linked loans.

The project has an appropriate diagnosis for the context of Ecuador. The problems and their determinants are correctly identified and quantified. The vertical logical presents a clear relationship between the main problems, determinants, and the proposed policies. The results matrix is congruent with the vertical logical. Result indicators are SMART and have time-bounded targets. The Monitoring and Evaluation plan provides a description of the sources of information and means of verification, allocates budget for monitoring and evaluation, and assigns responsibilities for these tasks. To measure the achievement of the objectives, a before-and-after methodology is proposed.

A risk of medium-high level has been identified in the execution environment for the second operation, which could compromise the compliance with the policy conditions of PBP II. In the POD, the team has defined strategies to mitigate this risk. The defined timelines for measuring the achievement of results anticipate the scenario in which the second operation of the series is not executed.

POLICY MATRIX

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: (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.
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Components/policy objectives	Policy conditions, programmatic operation I	Status of fulfillment of conditions, programmatic operation I*	Policy conditions, programmatic operation II
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	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.
Component 2. Support for the decarbonization of the energy sector in Ecuador			
2.1 Renewable energy: Move forward with the diversification of the energy matrix.	2.1.1. Approval of the Diversified Electricity Matrix / Generation Expansion Plan in the new context of the just energy transition.	Fulfilled (Q2 2023)	2.1.1 Updating of the Generation Expansion Plan, incorporating nonconventional renewable energy at a large scale with climate adaptation and resilience criteria.
	2.1.2 Evaluation of Nonconventional Renewable Energies Block projects (500 MW) recommended for contract award, with 461 MW involving the private sector.	Fulfilled (Q1 2023)	2.1.2 Launch of construction of Nonconventional Renewable Energies Block projects (500 MW).
	2.1.3 Approval of the Energy Transition Plan for the Galapagos Islands 2050, incorporating nonconventional renewable energy.	Fulfilled (Q2 2023)	2.1.3 Implementation of actions to incorporate nonconventional renewable energy into the Energy Transition Plan for the Galapagos Islands 2050.

* 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 I	Status of fulfillment of conditions, programmatic operation I*	Policy conditions, programmatic operation II
2.2 New high-potential alternative generation sources: Adopt policies that promote green hydrogen and solid waste as fuels for the energy transition.	2.2.1 Issuance of policy guidelines promoting green hydrogen as a vehicle for stimulating the transition of the electricity matrix and boosting the energy transition, with the resulting decrease in the use of polluting liquid fuels.	Fulfilled (Q2 2022)	
	2.2.2 Commissioning of a viability study for green hydrogen production and use in Ecuador to facilitate the development of a roadmap.	Fulfilled (Q4 2022)	2.2.1 Development of a roadmap for green hydrogen production and use, the scope of which will be reflected in the country's energy planning mechanisms. 2.2.2 Development of a regulatory framework for green hydrogen production and use in Ecuador.
	2.2.3 Issuance of regulations for power generation from non-hazardous municipal solid waste.	Fulfilled (Q1 2023)	
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 Issuance of policy guidelines for the electricity sector and specific guidelines to promote energy efficiency in all consumption sectors through improved energy management, good practices, and technological innovation.	Fulfilled (Q2 2022)	2.3.1 Updating of the Energy Efficiency Plan incorporating resources for its execution. 2.3.2 Creation of a fund to promote energy efficiency. 2.3.3 Launch of a program for the large-scale replacement of air conditioners in the coastal and eastern regions. 2.3.4 Issuance of standards and labeling indicating the end use of equipment. 2.3.5 Approval of a program to expand the use of smart meters.
	2.3.2 Elimination of fossil fuel subsidies in the shrimp sector (for farms with more than 30 productive hectares), complemented by an energy substitution plan.	Fulfilled (Q4 2022)	2.3.6 Approval of an energy substitution plan with energy efficiency measures for the shrimp industry, including public consultations and training for the sector.
	2.3.3 Approval of the Energy Transition Plan for the Galapagos Islands 2050, including	Fulfilled (Q2 2023)	2.3.7 Implementation of the energy efficiency and demand management measures set

Components/policy objectives	Policy conditions, programmatic operation I	Status of fulfillment of conditions, programmatic operation I*	Policy conditions, programmatic operation II
	energy efficiency and demand management measures.		out in the Energy Transition Plan for the Galapagos Islands 2050.
	2.3.4 Issuance of regulations on service quality for electricity distribution and sales.	Fulfilled (Q1 2023)	
2.4 Regional integration: Development of a mechanism for coordinating dispatch with members of the Andean Electricity Market.	2.4.1 Issuance of a technical endorsement of the proposed Andean Electricity Market regulatory harmonization reform.	Fulfilled (Q1 2023)	2.4.1 Approval of the proposed Andean Electricity Market regulatory harmonization reform.
2.5 E-mobility: Development of a regulatory framework for electric vehicles and charging stations.	2.5.1 Issuance of regulations for the schedule of low- and medium-voltage rates with hourly demand metering for electric vehicles by 2023.	Fulfilled (Q4 2022)	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.
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 Approval of the reformed General Regulations for the Electric Utility Act, to promote and facilitate private sector participation in the electricity sector under various management models, such as public-private partnerships, strategic partnerships, and similar arrangements.	Fulfilled (Q3 2022)	3.1.1 Establishment of the trust that will serve as a payment guarantee instrument to promote private sector participation in power generation.
	3.1.2 Issuance of the reform of the regulatory framework for distributed generation for the self-supply of regulated and unregulated electricity consumers, to help incentivize private investment.	Fulfilled (Q2 2023)	
	3.1.3 Approval of the commercial transaction system for the Ecuadorian electricity sector, to increase transparency in sector operations.	Fulfilled (Q1 2023)	

Components/policy objectives	Policy conditions, programmatic operation I	Status of fulfillment of conditions, programmatic operation I'	Policy conditions, programmatic operation II
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. Establishment of policies and guidelines to promote safe, quality, and affordable access to electricity for all sectors of society, with a view to achieving universal access to electricity in Ecuador by 2030.	Fulfilled (Q2 2022)	4.1.1 Approval and financing of the plan for universal access to electricity by 2030.
			4.1.2 Approval and publication of regulations with arrangements for delivering and managing electricity services in remote areas, including interoperability with the SNI.
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 of the guidelines for the development and implementation of gender inclusive strategies in the electricity sector, with action plans that include support for persons with disabilities.	Fulfilled (Q1 2023)	5.1.1 Approval of action plans with a specific roadmap establishing strategies and actions for the inclusion of women and persons with disabilities at electricity sector institutions.
	5.1.2 Approval of the gender equity plan for the Galapagos electricity sector as part of the Energy Transition Plan for the Galapagos Islands 2050.	Fulfilled (Q2 2023)	5.1.2 Budgetary allocations to finance the implementation of actions to promote compliance with the Disabilities Act. 5.1.3 Implementation of the gender equity actions set out in the Energy Transition Plan for the Galapagos Islands 2050.

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: (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.
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GENERAL DEVELOPMENT OBJECTIVE

Indicator	Unit of measure	Baseline 2022	Target 2027	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 project target 2025	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 ARCERNNR).	
1.2 Share of power generated from renewable energy (nameplate capacity).	%	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 project target 2025	Means of verification	Comments
Energy efficiency					
1.4 Shrimp farm users connected to the grid who have replaced fossil fuels with electricity.	#	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.	%	0	20	Report from Empresa Pública Estratégica Corporación Eléctrica del Ecuador [Electricity Corporation of Ecuador, Strategic Public Company] (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.	#	0	50	MEM report.	
Specific objective 2: Increase private sector participation in electricity service delivery					
2.1 Private sector participation in power generation using renewable energy.	%	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.	#	3	6	Notices of award from public selection processes.	
2.3 Amount of private sector financing for new nonconventional renewable energy in the Galapagos Islands.	US\$ millions	0	US\$32.2	MEM report.	
2.4 Distributed generation capacity for self-supply with private sector financing.	MW	11.08	60	Statistics from Ecuador's electricity sector.	

Indicator	Unit of measure	Baseline 2022	End of project target 2025	Means of verification	Comments
Specific objective 3: Make strides toward universal access to electricity					
3.1 Households newly connected to electricity, nationwide	#	0	80,358	Expansion and Quality Plan – MEM report.	
3.2 Households newly connected to electricity, in rural and marginalized urban areas.	#	0	25,645	Rural and Marginalized Urban Areas Access Plan - MEM report.	
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.	%	0	100	MEM report on progress in the development and implementation of action plans.	All 22 companies will have action plans including measures addressing technical training for women as line workers, the promotion of women to technical operation positions, training in gender, violence prevention, and community engagement, and energy-related trainings at primary and secondary schools.
4.2 Public electric companies whose facilities are accessible to and include signage for persons with disabilities.	%	10	100	MEM report on progress in the development and implementation of action plans.	The gender and diversity diagnostic assessments performed at the companies found that Esmeraldas and CNEL EP GYE are the only ones that are accessible and have signage.

OUTPUTS

Indicator	Baseline (2022)	Target (2023)	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.	Verified by the Bank.
Component 2. Support for the decarbonization of the energy sector in Ecuador				
Renewable energy				
Resolution approving the Diversified Electricity Matrix / Generation Expansion Plan as part of the just energy transition.	0	1	MEM Resolution MEM-VEER-2023-0006-RM.	
Certification of the findings of the evaluation of Nonconventional Renewable Energies Block projects (500 MW) recommended for contract award, with 461 MW involving the private sector.	0	1	Certification of the findings of the evaluation of Nonconventional Renewable Energies Block projects (500 MW).	
Ministerial decree, Energy Transition Plan for the Galapagos Islands 2050.	0	1	MEM decree MEM-MEM-2023-0008-AM.	
New alternative sources				
Ministerial decree regarding green hydrogen production and use in Ecuador.	0	1	Decree MEM-MEM-2022-0024-AM, published in Official Gazette 91 of 24 June 2022.	
Contract for the viability study for green hydrogen production and use in Ecuador to facilitate the development of a roadmap.	1	1	Certificate of start date. Contract for the development of a roadmap for green hydrogen production and use in Ecuador.	
Regulations for power generation from non-hazardous municipal solid waste.	0	1	Regulation ARCERNNR 002/23, issued through Resolution ARCERNNR-004/23 of 6 January 2023.	

Indicator	Baseline (2022)	Target (2023)	Means of verification	Comments
Energy efficiency				
Ministerial decree addressing the public policies for the electricity sector and for promoting energy efficiency in Ecuador and the provisions for implementation thereof.	1	1	Decree MEM-MEM-2022-0024-AM, published in Official Gazette 91 of 24 June 2022.	
Executive Decree eliminating fossil fuel subsidies for the shrimp sector (for farms with more than 30 productive hectares), complemented by an energy substitution plan.	1	1	Executive Decree 614 of 1 December 2022.	
Ministerial decree approving the Energy Transition Plan for the Galapagos Islands 2050, including energy efficiency and demand management measures.	0	1	MEM decree MEM-MEM-2023-0008-AM.	
Regulations on service quality for electricity distribution and sales.	0	1	Regulation ARCERNNR 002/20 (codified), issued through Resolution ARCERNNR-003/23 of 6 January 2023.	
Regional integration				
Technical endorsement of the proposed Andean Electricity Market regulatory harmonization reform.	0	1	Official letter ARCERNNR-CTRCE-2023-0168-OF of 15 February 2023, technical endorsement of the proposed decision to modify Decision 816, which establishes the Short-term Andean Regional Electricity Market.	
E-mobility				
Resolution approving the schedule of low- and medium-voltage rates with hourly demand metering for electric vehicles by 2023.	1	1	Resolution ARCERNNR-025/2022 of 30 November 2022.	
Component 3. Promotion of private sector participation in the electricity sector				
Executive Decree on the reform of the general regulations for the Electric Utilities Act to promote and facilitate private sector participation in the electricity sector under various management models, such as public-private partnerships, strategic partnerships, and similar arrangements.	1	1	Executive Decree 540 of 23 August 2022.	

Indicator	Baseline (2022)	Target (2023)	Means of verification	Comments
Reform of the regulatory framework for distributed generation for the self-supply of regulated and unregulated electricity consumers to incentivize private sector investment.	0	1	Official letter ARCERNNR 2023-0221 of 27 April 2023.	
Regulation of a commercial transaction system for the Ecuadorian electricity sector to improve transparency in sector operations.	0	1	Regulation ARCERNNR 002/23, issued through Resolution ARCERNNR-001/23 of 6 January 2023.	
Component 4. Promotion of universal access to electricity				
Ministerial decree with policies and guidelines to achieve universal access to electricity in Ecuador by 2030.	1	1	Decree MEM-MEM-2022-0024-AM, published in Official Gazette 91 of 24 June 2022.	
Component 5. Promotion of gender and disability equity in the electricity sector				
Ministerial decree on the guidelines for the development and implementation of gender inclusive strategies in the electricity sector.	0	1	Decree MEM-VEER-2023-0001-AM, published in Official Gazette 278 of 28 March 2023.	
Ministerial decree on the gender equity plan in the Galapagos electricity sector included in the Energy Transition Plan for the Galapagos Islands 2050.	0	1	MEM Decree MEM-MEM-2023-0008-AM.	

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

EC-L1287

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	50,000,000

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).

June 28, 2023 | 3:34 PM EDT

Certified by:

ORIGINAL SIGNED

Maria Fernanda Garcia

Chief

Grants and Co-Financing Management Unit

ORP/GCM

Date

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/23

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

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". Such financing will be for the amount of up to US\$450,000,000, 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 ____ 2023)

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/23

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

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". Such financing will be for the amount of up to US\$50,000,000, 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 ____ 2023)