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NICARAGUA

PROGRAM TO STRENGTHEN THE ELECTRICITY SECTOR IN NICARAGUA III

(NI-L1144)

LOAN PROPOSAL

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ABBREVIATIONS

CNDC	Centro Nacional de Despacho de Carga [National Load Dispatch Center]
DISNORTE	Empresa Distribuidora de Electricidad del Norte [Electrical Distribution Company of the North]
DISSUR	Empresa Distribuidora de Electricidad del Sur [Electrical Distribution Company of the South]
EBITDA	Earnings before interest, taxes, depreciation, and amortization
ENATREL	Empresa Nacional de Transmisión Eléctrica [National Electrical Transmission Company]
ENEL	Empresa Nicaragüense de Electricidad [Nicaraguan Electricity Company]
FFF	Flexible Financing Facility
GWh	Gigawatt hour
INE	Instituto Nicaragüense de Energía [Nicaraguan Energy Institute]
IRR	Internal rate of return
kWh	Kilowatt hour
LIBOR	London Interbank Offered Rate
MEM	Ministry of Energy and Mines
MHCP	Ministry of Finance and Public Credit
MW	Megawatt
MWh	Megawatt hour
NPV	Net present value
OC	Ordinary Capital
PBP	Programmatic policy-based loan
PCR	Project completion report
PNESER	National Sustainable Electrification and Renewable Energy Program
SIEPAC	Sistema de Interconexión Eléctrica de los Países de América Central [Central American Electric Interconnection System]
SIN	Sistema Interconectado Nacional [National Interconnected System]
VAT	Value-added tax

PROJECT SUMMARY

NICARAGUA
PROGRAM TO STRENGTHEN THE ELECTRICITY SECTOR IN NICARAGUA III
(NI-L1144)

Financial Terms and Conditions			
Borrower:	**Source**	**Amount (US$)**	**%**
Republic of Nicaragua	**IDB (Regular Ordinary Capital):**	39,000,000	60
Executing agency:	**IDB (Concessional Ordinary Capital):**	26,000,000	40
Ministry of Finance and Public Credit (MHCP)	**Total:**	65,000,000	100
	Regular OC (FFF) [a]	**Concessional OC**	
Amortization period:	20 years	40 years	
Disbursement period:	1 year		
Grace period:	5.5 years	40 years	
Interest rate:	LIBOR-based	0.25%	
Credit fee:	[b]	N/A	
Inspection and supervision fee:	[b]	N/A	
Weighted average life (WAL):	12.75 years	N/A	
Approval currency:	U.S. dollars charged to the Ordinary Capital		

Project at a Glance
Project objective/description: The general objective of the program is to support the Government of Nicaragua in consolidating a sector framework to guarantee the financial and operational sustainability of the sector. This is the third in a series of three programmatic policy-based loan (PBP) operations. The specific objectives are: (i) macroeconomic stability; (ii) guaranteeing the financial sustainability of the electricity sector; (iii) improving the transparency of sector management results; (iv) promoting a sustainable energy matrix, by encouraging renewable energy, private investment, and energy efficiency; and (v) promoting regional integration of the electricity sector.
Special contractual conditions precedent to the sole disbursement of the loan: Disbursement of this third loan under a PBP is contingent on fulfillment, to the Bank's satisfaction, of the policy conditions indicated in Annex II (Policy Matrix), and on fulfillment of the other conditions established in the loan contract (paragraph 2.1).
Exceptions to Bank policies: None.

Strategic Alignment						
Challenges:[c]	SI	☐	PI	☑	EI	☑
Cross-cutting issues:[d]	GD	☐	CC	☑	IC	☐

[a] Under the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes to the amortization schedule, and currency and interest rate conversions. When considering such requests, the Bank will take market conditions into account, along with operational and risk-management considerations, as well as the loan's level of concessionality, in accordance with applicable and current Bank policies.

[b] 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 relevant policies.

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

[d] GD (Gender Equality and Diversity); CC (Climate Change and 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.** In recent years, Nicaragua has been able to maintain a relatively sound macroeconomic position, which is expected to continue over the short and medium term. Economic growth has been sustained, with the economy growing by an average of 5.2% over the last five years, and closing 2016 at 4.7%. The fiscal deficit of the consolidated public sector is at moderate levels, amounting to 2.3% of gross domestic product (GDP) in 2016, primarily due to the electoral context and public investment in productive infrastructure. Public debt as a percentage of GDP is sustainable and trending downward, falling from 45.3% in 2015 to 45.0% in 2016. Inflation has remained at historically low levels, closing at 3.1% in 2015 and 2016. In the external sector, the current account deficit fell from 9.0% of GDP in 2015 to 8.6% of GDP in 2016. Nonetheless, the sustainability of the external position over the medium term continues to be vulnerable to volatility of prices for commodities, including oil. In addition, the financial system is sound with coverage and return indicators exceeding international standards.

1.2 **Electricity sector.** Electricity sector institutions in Nicaragua include: (i) the Ministry of Energy and Mines (MEM), which is responsible for planning electricity sector development strategies; (ii) the Instituto Nicaragüense de Energía [Nicaraguan Energy Institute] (INE), the energy sector's regulatory and supervisory entity; (iii) the Centro Nacional de Despacho de Carga [National Load Dispatch Center] (CNDC), the operating entity responsible for administration of the electricity market and operation of the Sistema Interconectado Nacional [National Interconnected System] (SIN); and (iv) stakeholders participating in the activities of the electricity industry: generators, transmitter, distributors, and users.

1.3 Electricity generation in Nicaragua is 98.8% concentrated within the SIN. In 2016 gross power generation in the SIN amounted to 4,541 gigawatt hours (GWh), 52.8% of which was from renewable sources (i.e., hydroelectric, geothermal, wind, and sugar cane bagasse), and the remainder was covered by nonrenewable thermal power (fuel oil and diesel). In 2016, the transmission system reported 2,297 kilometers (km) of national lines and 305.6 km of lines in the Central American Electric Interconnection System (SIEPAC).[1] Electricity coverage increased from 72.3% in 2012 to 85.4% in 2016, primarily benefiting rural populations with high poverty levels.[2] Nicaragua's cost to supply electricity is the highest in Central America.[3] In 2015, the average regulated price to the Nicaraguan user was

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1 In 2016, through the SIEPAC, Nicaragua imported 204.8 GWh and exported 17.9 GWh, equal to 5.4% of annual generation and very close to the 6% average participation of the countries in the regional electricity market. The distribution system consists of the Empresa Distribuidora de Electricidad del Norte [Electrical Distribution Company of the North] (DISNORTE) and the Empresa Distribuidora de Electricidad del Sur [Electrical Distribution Company of the South] (DISSUR), while isolated areas are served by cooperatives and agencies responsible for distribution. Total (technical and nontechnical) losses fell from 28.8% to 23.9% during the period 2006-2016.

2 According to the report by the National Institute for Development Information (INIDE) on poverty in Nicaragua, 2014, in urban areas 14.8% of the population lives in poverty while in rural areas poverty affects 50.1% of the population. http://www.inide.gob.ni.

3 Economic Commission for Latin America and the Caribbean (ECLAC) (2017). Estadísticas del subsector eléctrico de los países del Sistema de la Integración Centroamericana [Statistics of the Electricity Subsector of the Countries of the Central American Integration System], 2015. http://www.cepal.org/es/publicaciones/.

US¢20.41/kilowatt hour (kWh), higher than the average for the five remaining Central American countries, which was US¢17.98/kWh. This is primarily due to the heavy role that thermal generation plays in the generation matrix and high losses in the system, both of which factors are the second highest in the region, exceeded only by Honduras. In 2005, the Government of Nicaragua introduced an offset mechanism[4] for distributors to finance rate deviations between the wholesale rate recognized in the rate schedule calculation and generation costs in the wholesale market. Mechanisms were also established for subsidies on the price of electricity to soften the effect of the sharp increase in the price of fossil fuels for end users,[5] in that 24.9% of Nicaraguan households are below the poverty line.[6] The offsets meant transfers from the Government of Nicaragua to the Electrical Distribution Company of the North (DISNORTE) and the Electrical Distribution Company of the South (DISSUR) on the order of US$198.6 million over the period 2010-2013,[7] equal to 9.7% of the value of the SIN's energy sales during that period, with a process for repayment of those transfers amounting to US$84.2 million over the period 2014-2016. The most significant subsidy, the subsidy directed to residential consumers with consumption up to 150 kWh/month, amounted to US$61.4 million in 2016, equal to 11.3% of the value of the SIN's energy sales.

1.4 **Challenges in the electricity sector.** The Program to Strengthen the Electricity Sector in Nicaragua has been supporting, through the first and second loans, Nicaraguan government actions to ensure the stability and sustainability of the electricity sector, making significant strides in overcoming the following challenges:

1.5 **Vulnerability of electricity service costs based on the energy matrix.** During the period 2009-2016, the preponderance of generation based on petroleum derivatives fell as a percentage of Nicaragua's electricity generation. In 2016, electricity generated using fossil fuels represented 47.2% of the system's gross generation, having fallen from a level of 68.7% in 2009. This was due to the incorporation of 266 MW of effective capacity in renewable energy in the SIN, representing an increase of 33%[8] and defining a context of consistent growth, including a reserve margin, when compared with 28.1% growth in demand during that same period. The

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4 Law 554. The Energy Stability Act. Official Gazette 224 of 18 November 2005. The offset mechanism establishes a wholesale rate that partially offsets the real generation cost and the difference is covered through external financing. The distributors pay the generators the real cost of generation with the support of that financing.

5 See Optional Annex 3, Point 4, Development of the Electricity Sector's Financial Situation.

6 National Institute for Development Information (INIDE). Reporte de pobreza y desigualdad EMNV [National Household Survey on Measurement of Levels of Living (EMNV), Poverty and Inequality Report], 2016. http://www.inide.gob.ni.

7 In 2014, the INE reports that there were no amounts to be paid for rate offsets.

8 Under the same strategy of giving priority to renewable energy and private investment, the 2016-2030 Generation Expansion Plan provides for incorporating 1,223 MW during that period, 64% based on renewable sources, which will have an impact on diversification of the energy matrix and on generation costs. To consolidate reduced dependence on generation based on fuel oil and diesel, leaving the country quite vulnerable to variations in international fuel prices, the Generation Expansion Plan provides for 25% of new generation based on natural gas. In the past, high prices for petroleum derivatives have put great pressure on generation costs, with the resulting pressure to transfer those costs to end consumers in a country where per capita income is among the lowest in the region. High generation costs still determine high prices for electricity for the end consumer, with a regulated average price in Nicaragua of US$204.1/MWh in 2015, 13.5% higher than the average of US$179.8/MWh for the remaining SIEPAC countries.

first and second programmatic loans laid the foundation for supporting the change in the electricity matrix with actions related to: operational security and long-term planning for generation and transmission; framework for action to incorporate distributed generation into the system; and guidelines for implementing competitive processes that add new renewable generation to the system. This operation ensures that planning is current and done periodically, incorporates distributed generation in the Electrical Industry Act, approves its regulations, and approves the regulatory actions for competition in generation.

1.6 **High cost of electricity service based on system losses.** The Nicaraguan government has a strategy for reducing nontechnical losses in the distribution companies through normalization of irregular customers and direct actions based on antifraud regulations.[9] Since 2007, when losses of 28.4% were recorded, continuous reductions have been achieved, bringing the level to 23.9% in 2016, which is still relatively high. The level of losses has an impact on the average cost of electricity, producing an ongoing imbalance in the sector's finances, in that only a portion of total costs are transferred to the end consumer. In 2016, the 11.6% of losses in excess of the neighboring countries' average meant US$82.5 million in energy not sold, equal to 3.7% of budgetary resources. The first and second programmatic loans made it possible to adopt legislation to promote management of distribution losses, commit investment in this line, and enforce the provisions of the anti-fraud law, punishing any client, consumer, or electricity service user for energy theft. This operation ensures the continuity of those actions by implementing new incentives for loss management, proportionally scaling up the investment requirement, and continuing to enforce anti-fraud provisions.

1.7 **Failure to consolidate the sector framework for private investment.** Law 272, the Electrical Industry Act, provides a broad framework for energy and power contracting, and its regulations establish the possibility of using bidding procedures or direct contracting in the sector. The energy crisis that affected the country in 2006 resulted in preference being given to direct contracting. Considering that generating capacity with an ample reserve margin has been achieved, this is no longer an alternative because it does not provide a competitive price signal for energy traded on the wholesale market. The first and second programmatic loans achieved the objective of promoting discussion on this issue in the Energy Cabinet, based on the preparation of a study to improve competition, that has laid the foundation for the regulatory proposal that will be approved under this operation. The reinstatement of bidding procedures, subject to clear and specific regulations, would offer legal advantages to the country and for private investment.

1.8 **Limited participation in the regional market.** Progress made in adapting national legislation to harmonize it with the regional electricity market[10] has allowed for the country's increased participation in the energy trade. Nicaragua's integration with the other Central American countries, quite incipient up to 2015[11] due to sufficient domestic supply capacity and export capacity constraints, with exports and imports

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9 The antifraud regulations used to establish penalties only for users with consumption above 300 kWh/month; the penalties now apply to the entire universe of users.

10 Reflected in optional electronic link 6.

11 In 2014, the final year of the second operation, exports and imports are reported to have reached 1.8% of net energy generated in the SIN.

totaling 1.3% of net energy generated in the SIN, shows a gradual increase, reaching 5.4% in 2016. Progress must continue to be made in this area in order to maximize the benefit of accessing competitive energy prices in the regional market. Through actions under the first and second programmatic loans, national and regional legislation were harmonized, and the present operation locks in the ongoing monitoring and identification of areas for harmonization.

1.9 **Transparency of results in sector management.** Transparency in the publication of results of electricity sector stakeholders is an essential condition for the sector's proper operation, providing clear signals for investment and allowing public and private companies to be informed of the performance of other stakeholders, and thus able to adapt their operations in the best way possible. With the actions of the first and second loans, public companies[12] and private distributors have published financial and management results approved by the Office of the General Comptroller of the Republic (CGR) and the INE, respectively. Continuing this practice, in this third operation, will build a key source of information for monitoring the health of the electricity market.

1.10 **High electricity subsidy.** In 2016, subsidies in the sector amounted to US$87.4 million, representing 11.3% of total billing for electricity and 3.9% of the country's budgetary resources. Currently, four types of subsidies with direct impact on the country's fiscal accounts can be identified. They are directed to: (i) residential customers who consume less than 150 kWh/month;[13] (ii) informal settlements;[14] (iii) retirees;[15] and (iv) exemption from value-added tax (VAT).[16] The cost of subsidies has continued on an upward trend due to the use of nonadjustable historic base rates, limited targeting of the main subsidies, and the lack of an adjustment plan to ensure their financial sustainability. The subsidy for residential customers consuming less than 150kWh/month comes from Law 554, the Energy Stability Act (2005), which established that residential consumers would have their rates frozen at June 2005 levels, a benefit that reaches 84.9% of residential users. At the end of 2016, there were 767,500 subsidized customers, amounting to US$61.38 million in subsidies. The subsidy for informal settlements comes from the protocol signed by the Nicaraguan government and the distributors, DISNORTE and DISSUR, which established a transfer from the Nicaraguan government for consumption in informal settlements[17] in the two distributors' concession areas.[18] The subsidy for retirees is based on the application of Law 160 and Law 720. In 2016, it totaled US$5.0 million, with 39,236 beneficiaries. Exemption from the VAT is based on Law 667 and Law 554, establishing that customers with consumption up to 300 kWh/month do not

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12 Empresa Nicaragüense de Electricidad [Nicaraguan Electricity Company] (ENEL) for generation and Empresa Nacional de Transmisión Eléctrica [National Electrical Transmission Company] (ENATREL) for transmission.

13 The cost of the subsidy for residential customers with consumption up to 150 kWh/month went from US$38.4 million in 2011 to US$61.4 million in 2016.

14 The cost of the subsidy for informal settlements went from US$6.0 million in 2011 to US$7.6 million in 2016.

15 The cost of the retiree subsidy went from US$2.6 million in 2011 to US$5.0 million in 2016.

16 The cost of the subsidy for exemption from the VAT was US$13.4 million in 2016.

17 Informal settlements with irregular, low-quality, unsecure, and discontinuous service.

18 The objective of this subsidy is to cover for a period of 60 months starting in July 2013 the cost to supply users in informal settlements, supporting the financial sustainability of the distribution companies. In July 2014, the share was reduced from 2.5% to 2.0% of the value of energy sold, which was reflected in a reduced subsidy, which fell from US$10.38 million in 2014 to US$7.62 million in 2015.

pay the tax and customers with consumption between 300 and 1,000 kWh/month pay 7%, with a tax rate established at 15%. In 2016, this exemption represented US$13.4 million. External financing of the rate represented an equalization fund that during the period 2010-2013 grew to US$198.5 million, which was used to cover the difference between the real cost of energy and the rate applied to users. In the period 2014-2016, the trend is reversed, reaching an applied rate exceeding the real cost of energy, allowing for US$84.2 million in repayment of the financing. The actions of the first and second programmatic loans allowed guidelines to be established for the adjustments to the subsidies, and proposed adjustment measures to be developed; with the present operation, the subsidy adjustment measures will be approved at the level of the Economic and Energy Cabinets.

1.11 **Bank experience in the sector and lessons learned.** This operation continues the efforts made under the first and second programmatic operations under the "Program to Strengthen the Electricity Sector in Nicaragua" approved in 2013 (3068/BL-NI) and 2015 (3493/BL-NI), respectively. In addition,[19] the IDB has broad knowledge of Nicaragua's electricity sector. Under the Program to Support the Electricity Sector I, II and III (loan 1933/BL-NI and amendatory loans approved between 2007 and 2009), support is being provided for activities in renewable energy generation, expanded and improved transmission, and a pilot project to normalize service. In addition, the National Sustainable Electrification and Renewable Energy Program (PNESER) I, II and III (loan 2342/BL-NI and amendatory loans approved between 2010 and 2012), is a multiyear program supported by various international financing and cooperation institutions[20] that seeks to have a transformational effect on national electricity coverage.[21] The Program on the Expansion and Strengthening of Nicaragua's Electricity Transmission System (loan 3611/BL-NI) was approved in 2015, with transmission reinforcement actions to meet the demand and for new generation, as well as adaptation to the regional system. The Geothermal Exploration and Transmission Improvements Program under the Nicaragua Investment Plan[22] was approved in 2016 and supplements the transmission reinforcements based on local and regional requirements and promotes the exploration of geothermal potential. IDB experience and lessons learned in the electricity sector have allowed it to determine that in order to move toward a sustainable electricity sector more in-depth reforms will be needed in terms of the financial management of the sector, transparency of information, sustainability of the energy matrix, and regional

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19 Since 1973, when the IDB supported an initial renewable energy program. In 1998, through loan 1017/SF-NI, the IDB participated in the reforms of the Electricity Law that transformed the sector. Through the loan on National Transmission Investments for Integration with the SIEPAC Project (loan 1877/BL-NI), works were financed to strengthen the national electrical transmission network so it could be adapted to the SIEPAC Central American network.

20 Financial and international cooperation organizations working with the IDB: Korean Eximbank; Latin American Investment Facility (EU/LAIF); European Investment Bank (EIB); Central American Bank for Economic Integration (CABEI); Nordic Development Fund; Japan International Cooperation Agency; and the OPEC Fund for International Development (OFID).

21 By significantly increasing electricity service coverage, scaling up the use of renewable energies, promoting energy efficiency, and optimizing the technical and commercial management of isolated systems.

22 It has combined IDB, KIF, SREP, and CTF financing (3727/BL-NI, 3728/KI-NI, 3729/OC-NI, GRT/SX-15741-NI, GRT/SX-15742-NI, and GRT/TC-15743-NI).

integration.[23] The first and second loans in the programmatic series have identified mechanisms to overcome the main challenges to fulfilling policy commitments. Constant and many-sided dialogue with the authorities made it possible to overcome the challenges of interagency coordination and in-depth technical analysis in the diagnosis and design of proposed actions and policies facilitated acceptance and implementation. In this third operation, the program's objectives will be achieved by maintaining the actions planned from the outset. IDB experience in executing PBP operations to support reforms in the sector and implement regulatory frameworks, or update existing instruments is reflected satisfactorily in operations such as those in Ecuador (3420/OC-EC), Panama (PN-L1145), Suriname (2848/OC-SU), the series of four PBP operations in Peru (2847/OC-PE et seq.), the series of three PBP operations in Guyana (GY-L1017 et seq.), and the series of two PBP operations in Barbados (2609/OC-BA; 2410/OC-BA).

1.12 **Coordination with other lenders/donors.** The Bank heads up three programs in the sector with the participation of other lenders, with which it has coordinated based on synergies arising from the characteristics of each loan and each fund's thematic priority, maximizing the benefits for the various projects while at the same time establishing coordination mechanisms for execution so that programs can be executed in accordance with comprehensive objectives and targets. The Program to Support the Electricity Sector (1933/BL-NI and amendatory loans) relies on participation from the Central American Bank for Economic Integration (CABEI) and the European Investment Bank (EIB); the PNESER (2342/BL-NI and amendatory loans) relies on the participation of another seven colenders;[24] and the Geothermal Exploration and Transmission Improvements Program under the Nicaragua Investment Plan relies on another three sources of financing.[25]

1.13 **Results and progress made in the program's first and second loans.** The results as of 2016 show significant progress. The sector's financial sustainability achieved equilibrium between the supply cost and the sale price to the end consumer in September 2013, and provided savings in the first half of 2014. As of April 2015, as a result of the periodic review and adjustment of rates, these savings have made it possible to repay the debt incurred in previous years, so as to ensure the stability scenario planned for the second and third PBP operations and advance to the subsidy adjustment phase, boost market competitiveness, and achieve operational security in planning the system expansion, as key elements of the program. Moreover, the evolution of the impact indicators makes it possible to infer that the targets for 2016 were met or already show positive prospects in most cases. Specifically, the impact indicators show: (i) the proportion of renewable energy in the

[23] The implementation of the PNESER made it possible to develop a working framework and efficient coordination both at the level of government agencies responsible for execution and the level of financing bodies. It has also shown the importance of supporting the sector within a comprehensive framework covering aspects of generation, transmission, and distribution infrastructure, as well as electricity sector regulatory and development tools that make it possible to achieve impact results for the sector. This framework benefits the execution of the program now in progress and has set the foundations for preparing future programs.

[24] See footnote 22.

[25] See footnote 24.

SIN reaching 52.8% in 2016 (target of 56.4%);[26] (ii) the EBITDA margin of the Empresa Nacional de Transmisión Eléctrica [National Electrical Transmission Company] (ENATREL) and the Empresa Nicaragüense de Electricidad [Nicaraguan Electricity Company] (ENEL) recording 24.6%[27] and 3.6%, respectively, in 2016 (targets of 5% and 10%); and (iii) the cash recovery index of DISNORTE and DISSUR reaching 78.3% in 2016 (target of 80.0%). The specific targets of the components show equally satisfactory behavior. See the Results Matrix[28] for more details.

1.14 **Assessment of fulfillment of policy commitments.**[29] As a result of the programmatic series of three operations, the assessment shows that the commitments reflected in the original policy matrix remain unchanged and the conditions for the first and second operations were met, as planned. In this third operation, the condition regarding the commitment to approve the regulation on distributed generation (paragraph 1.24) reflects the reform of the Electrical Industry Act, which was identified as the legal foundation needed for the regulation to be passed. The National Assembly adopted the reform, and the legislation is expected to pass in November of this year. In the case of the commitment to send the energy efficiency bill to the National Assembly (paragraph 1.24), progress has also been made with the approval and promulgation of that law, and in the case of the proposal on electricity sector subsidy adjustments (paragraph 1.21), those adjustments were approved by both the Economic Cabinet and the Energy Cabinet. The adjustments make it possible to achieve the development objectives of this third operation and of the programmatic series.

1.15 **Program strategy**. The program is structured as a programmatic policy-based loan (PBP) consisting of three operations and seeks to: (i) support the Government of Nicaragua with actions aimed at recovering financial sustainability in the electricity sector; (ii) support technical and operational sustainability; (iii) establish mechanisms to improve the transparency of results in the management of the electricity sector; (iv) promote the use of renewable sources; (v) promote private participation and energy efficiency to achieve a sustainable energy matrix; and (vi) promote regional electrical integration, increasing the Nicaraguan electricity sector's share in the regional market. The broad nature of the program's actions defines all electricity sector users, as well as those that could access the service due

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[26] The 2016-2030 Plan de Expansión de la Generación [Generation Expansion Plan] plans to reach 57% renewable energy in 2019.

[27] Since 2014 ENATREL has significantly improved its operating income, keeping its operating costs controlled, which has allowed it to increase its EBITDA and report a high margin.

[28] The Results Matrix shows the EBITDA margin for ENATREL and ENEL for the period 2012-2016 and the DISNORTE-DISSUR cash recovery index for the period 2009-2016. In the case of ENEL, the EBITDA margin is also included, excluding the Operations Directorate for Isolated Systems, with a value of 29.4% for 2016 and showing that ENEL's generation activity during the period 2012-2016 has maintained an EBITDA exceeding the target of 10%. The INE has updated the calculation of the cash recovery index for the private distributors and that information has been reflected in the Results Matrix. The cash recovery index is a combination of the loss rate and the collection rate and shows significant progress, increasing from 72.5% in 2010 to 78.3% in 2016. As the loss rate has the most room for improvement and assuming that the collection rate remains constant, the target of 80% for the cost recovery index may be achieved in 2019 with the PNESER contribution to the reduction of losses.

[29] Optional Electronic Link 8 shows the comparative matrix of policy commitments established for the three operations.

to the effect of those actions, as the beneficiary population and ensures that the reforms made since the first operation are maintained and consolidated. The program components are consistent with the targets and achievements of infrastructure programs that have already been executed or are being executed, such as 2342/BL-NI that through normalizing irregular users to reduce losses and implementing massive energy efficiency projects that support the financial sustainability of the electricity sector, and through pre-investment studies establishes a portfolio of projects that promote the use of renewable sources and private participation, as well as with loans 3611/BL-NI and 3727/BL-NI that through transmission projects strengthen the regional system's capacity by promoting electrical integration, and through geothermal exploration promote the use of a strategic renewable source. This third operation ensures that the advances made are maintained and continues deepening reforms to achieve the program's targets, including further consolidation of the distributors' financial sustainability, annual updating of rates, broad dissemination of the companies' management and financial indicators by the INE, approval and dissemination of the expansion plan to promote renewable energies, and adoption of operating regulations for integration with the regional market. In addition, this third PBP continues to support policy measures to produce structural changes in the sector and contribute to its long-term sustainability, including the approval of a plan on adjusting the subsidies so as to target the neediest population segments, approval of a plan to drive new generation contracting in the wholesale market through competitive processes, promote private investment and the participation of renewables, regulation of distributed electrical generation through reform of the Electrical Industry Act, energy efficiency legislation, measures to increase the transparency of information, and measures to ensure compliance with rules and efficient operation of the electricity sector. The IDB, through ongoing discussions and technical cooperation resources,[30] supports these actions. The strategy of this third PBP consists of maintaining and furthering reforms with policy measures to form the basis for the institutional, planning, and regulatory changes that the sector needs to ensure that: (i) an appropriate electricity policy is implemented; (ii) the planning process for expanding generation and transmission is strengthened; (iii) the process seeking more effective supervision of the electricity market continues; and (iv) the process of verifying improvement in both financial and operational indicators continues.

1.16 **The country's and the Bank's strategy**. The strategic pillars defined by the Nicaraguan government's strategy in the energy sector, the "2012-2017 Action Plan for the Electricity and Mining Sector in Nicaragua,"[31] are: (i) universal access to power; (ii) energy efficiency; and (iii) diversification of the energy matrix. The plan also establishes that energy policy is based on laws, decrees, and the National Human Development Plan, which has the following principal objectives: (i) to strengthen and increase the effectiveness of government performance in the energy sector; (ii) to guarantee secure, reliable, and quality supply of energy for the country;

[30] The IDB approved technical cooperation operation ATN/FI-14624-NI, Support for the Program to Strengthen the Energy Sector in Nicaragua, which is financing the additional studies needed to which the Government of Nicaragua has committed. In addition, technical cooperation operation NI-T1242 is being processed to support the implementation of competitive procedures in the electricity market.

[31] Prepared by the Energy and Mining Policies and Planning Directorate of the Ministry of Energy and Mines, September 2012.

and (iii) to promote environmentally sustainable development of the energy sector. The proposed operation is directly related to the government's Action Plan for the sector through Component IV aimed at promoting a sustainable energy matrix, renewable energies, private investment, and energy efficiency; and is related to the National Human Development Plan through Component II directed to the financial sustainability of the electricity sector and Component III for the transparency of results in the management of the sector, to make the government's performance effective in the energy sector; and Component V promoting regional integration of the electricity sector so as to ensure a safe, reliable, and quality electricity supply. The Bank's 2012-2017 country strategy with Nicaragua (document GN-2683) establishes the energy sector as one of the four priority sectors for intervention. The program is consistent with the strategic objectives that define IDB participation in the electricity sector to: (i) help adapt the sector framework to ensure sector efficiency and financial and operational sustainability, by reducing the subsidy in settlements and establishing a program of adjustment measures for higher subsidies; (ii) support the country in expanding electricity coverage by implementing an investment plan with the distributors; (iii) increase the reliability and efficiency of the supply through actions to provide incentives for reducing losses; (iv) increase electrical generation from renewable sources through actions allowing for improved energy contracting procedures and approval of regulations on distributed generation; and (v) support actions to strengthen the sector framework vis-à-vis the regional electricity market by harmonizing and adapting national regulations to the regional regulatory framework.[32]

1.17 **Strategic alignment**. The program will help to overcome the main challenges reflected in the Update to the Institutional Strategy 2010-2020 (document AB-3008) of: (i) low productivity and innovation by increasing the use of renewable energies and implementing a national energy efficiency program; and (ii) lagging economic integration through support for regional electrical interconnection according to the classification set forth in documents GN-2650 and GN-2733 in the context of the criteria for multinational targeting based on its contribution to insertion of the national system within the regional system; additionality based on promotion of increased national participation in the regional electricity market; and subsidiarity based on support for harmonization of the national and regional regulatory framework. The program is also aligned with the crosscutting area of climate change and environmental sustainability through promotion of a sustainable energy matrix encouraging renewable energies, private investment, and energy efficiency by reducing power losses in the transmission system. It will also contribute to the country's development targets under the Corporate Results Framework (CRF) 2016-2019 (document GN-2727-6) on: (i) reduction of greenhouse gas emissions (CO_2); and (ii) generation capacity from renewable energy sources. Approximately 31.25% of the loan proceeds are associated with policies that will promote climate change mitigation activities, in accordance with the joint MDB methodology for calculating climate finance. These resources contribute to the IDB Group's target of increasing financing for projects related to climate change to 30% of all operation

[32] The Bank's country strategy is consistent with the Nicaraguan government's strategy. This operation will primarily support the financial sustainability of the sector, complementing actions to strengthen the sector framework to stimulate private investment, sustainability of the energy matrix, and promotion of regional integration.

approvals by the end of 2020. In addition, the program is aligned with the Sector Strategy to Support Competitive Global and Regional Integration (document GN-2565-4) (optional electronic link 6) and the Strategy for Sustainable Infrastructure for Competitiveness and Inclusive Growth (document GN-2710-5) in its priority area of "supporting the construction and maintenance of an environmentally and socially sustainable infrastructure to help improve the quality of life." In addition, the program is aligned with the Corporate Results Framework (CRF) 2016-2019 through the indicators of reduced emissions and generation from renewable energy sources.

1.18 The program is also aligned with the principles of the Public Utilities Policy (document GN-2716-6) (optional electronic link 7) with reference to the electricity subsector, supporting Nicaraguan government actions that contribute to the technical, operational, and financial sustainability of the sector, promoting policies to target subsidies, reduce losses in the distribution system, promote competition and private sector participation, promote financial and management transparency in sector entities, and generally to contribute to the adequate supply of electricity, satisfy rising demand, improve service quality, and promote access to electricity service.

B. Objectives, components, and costs

1.19 **Objectives**. The general objective of the program is to support the government of Nicaragua in consolidating a sector framework to ensure the financial and operational sustainability of the sector. This is third operation in a series of three programmatic policy-based loans, the specific objectives of which are: (i) macroeconomic stability; (ii) guaranteeing the financial sustainability of the electricity sector; (iii) improving the transparency of sector management results; (iv) promoting a sustainable energy matrix, by encouraging renewable energies, private investment, and energy efficiency; and (v) promoting the regional integration of the electricity sector.

1.20 **Component I. Macroeconomic stability.** The objective of this component is to ensure a macroeconomic context consistent with the objectives of the program as established in Annex II.

1.21 **Component II**. **Financial sustainability of the electricity sector.** This component supports the financial and institutional sustainability of the electricity sector by developing and implementing policies and/or actions aimed at adopting a set of measures for recovery of the sector's financial sustainability. This component of the third PBP operation seeks to expand and consolidate regulatory actions for the organization and stability of the sector to ensure financial stability at the distribution level that were executed under the first and second PBP operations. Specifically, the actions required of the INE are: (i) application of the modified loss expansion factor[33] recognized in rates from 1.15 to 1.14; in the context of continuing the adjustment process from 1.13 (in effect in 2013) to 1.16 and gradual reduction to 1.14 over five years starting in 2013, to facilitate the distributor's financial recovery and provide it with incentives to manage loss reduction in upcoming years; (ii) maintenance of the settlement subsidy at 2% of the energy sold valued at the

[33] The loss expansion factor is the multiplier of the purchase price of energy at medium voltage; thus, a loss expansion factor of 1.15 increases that price by 15%, i.e., it recognizes losses in that proportion.

average purchase price; (iii) issuance of debt securities[34] that will make it possible to include the financial costs of arrears of payments to generators in the period 2009-2013 and current interest based on calculation of the rate at the distribution level until effective payment of the debts incurred during that period, in accordance with Article 113(5) of Law 272, maintaining the terms of the settlement by the generators and distributors (DISNORTE and DISSUR); (iv) continued implementation of the antifraud provisions[35] contained in Law 661, the "Law for the Distribution and Responsible Use of the Public Electricity Utility," punishing energy theft and applicable to all customers, consumers, and users of electricity service; (v) continued implementation of the agreement with the distributors (DISNORTE and DISSUR) executing the US$75 million investment plan over a period of five years (2013-2018)[36] to improve the quality and control of electricity supply, expand coverage to benefit rural populations with high poverty levels, and help to reduce losses; (vi) periodic review of rates in the electricity sector and issuance by the INE of the corresponding resolutions adjusting rates to updated costs of supply, transmission, and distribution, so that the average sale price to the consumer can be kept equal to the average indicative sale prices, thus ensuring that the price of energy offsets 100% of supply, transmission, and distribution costs;[37] and (vii) Energy Cabinet and Economic Cabinet approval of the proposed adjustment measures on electricity sector subsidies that were submitted by the Ministry of Finance and Public Credit (MHCP), and their submission to the Office of the President, along with the targets to be met, the actions needed, and the schedule for their implementation.

1.22 The frame of reference for the subsidies proposal will include: (i) an adjustment period starting in 2018 and ending in 2022; (ii) elimination of the subsidies base with reference to historical rates, moving to determination of subsidies as a percentage of the full rate in effect; (iii) until the end of the adjustment period, in 2022, the social subsidy for the segment consuming 150 kWh/month or less, currently subsidized at a percentage higher than 50% of the full rate, will not be higher than the following percentages of the full rate in effect: 50% for the first 50 kWh, 45% for the next 50 kWh and 25% for the last 50 kWh; (iv) until the fourth year of the adjustment period, in 2021, the subsidy for the segment consuming more than 150 kWh/month, currently within a range of 53% to 100% of the VAT, will be completely eliminated; and (v) until the end of the adjustment period, in 2022, the subsidy for the retiree segment, currently set at 50% of the electricity rate for the first 150 kWh consumed, will not be higher than 25% for consumption up to 300 kWh and is eliminated for

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34 The total reconciled amount assigned to debt securities is US$70.9 million.

35 With the antifraud inspections, 9,886 cases of fraud were identified in 2013; 12,275 in 2014; 23,318 in 2015; and 21,562 in 2016.

36 During the period 2013-2015 the INE verified an investment of US$52.9 million by the distributors and is now verifying the investment reported by the distributors for 2016 amounting to US$29.9 million. The total is US$82.8 million, which fulfills the investment commitment.

37 The INE is the entity responsible for reviewing and issuing new rates and is authorized by law to make monthly rate adjustments, as necessary. The rate adjustment may be due to changes in the price of oil or in the share of renewables, producing an adjustment in the wholesale purchase price that is later transferred to the rate. The transmission toll and the distribution value-added that offset the transmission and distribution costs, respectively, have more stable behavior and are subject to annual revisions.

consumption higher than 300 kWh. The policy commitments established for the third PBP in this component (see Annex II) have already been satisfactorily met.

1.23 **Component III**. **Transparency of results in sector management.** This component will allow for increased transparency of results in sector management, establishing mechanisms to improve the visibility of results of public companies and concessionaires. This third PBP operation seeks to continue the conditions from the first and second operations that have made it possible to boost transparency in the sector, specifically by: (i) publishing on the INE website the contracts that the INE has signed for financing electricity rates and its updated balance sheet; (ii) publishing on the ENEL and ENETREL websites, respectively, their financial statements audited by independent auditors approved by the CGR, corresponding to each year during the period from 2012 until the year immediately prior to the year when the disbursement is made; (iii) INE's publishing each year of the cash recovery index (combined index), the loss rate, and collection rate as supplied by DISNORTE and DISSUR; and (iv) INE's publishing of wholesale cost deviations reflecting the difference between the actual electricity purchase price and the price recognized in the rate for 2013 until the year immediately before the year when disbursement is made. The policy commitments to date have already been satisfactorily met.

1.24 **Component IV. Sustainable energy matrix, promotion of renewable energies, private investment, and energy efficiency.** This component will support the promotion of renewable sources, distributed generation, and private participation in the sector to achieve a sustainable energy matrix. This third PBP operation seeks to continue institutional and regulatory reforms in the electricity sector undertaken in the first and second operations, to achieve the objective of promoting renewable energies, private investment, and energy efficiency, specifically: (i) Energy Cabinet approval of actions to improve procedures for energy and power contracting on the wholesale market as an incentive for private investment, as submitted to it by the MEM,[38] including: (a) comprehensive planning of the system to construct an efficient electricity matrix; (b) timely introduction of competitive procedures to ensure renewal of more costly and inefficient generation; (c) definition of facilities for competition in renewable resources projects with higher investment risk; and (d) introduction of conditions for participating in the regional electricity market; (ii) MEM approval, as a result of a biannual review, of the Indicative Expansion Plan; the approved plan or plans should include generation projects based on renewable resources that have been developed based on the operational security methodology defined by the National Load Dispatch Center, an entity of the National Electrical Transmission Company (ENATREL-CNDC) during the second operation under this programmatic series; (iii) confirmation by the ENATREL-CNDC that based on the operational security methodology approved as a condition of the second operation, the 2017-2026 Indicative Generation and Transmission Plans would ensure compliance with the quality, safety, and performance criteria; (iv) National Assembly approval of the necessary amendments to the Electrical Industry Act to make approval of the regulations for distributed electrical generation in the country viable, and MEM approval of those regulations. The scope of the regulations will include: (a) power

[38] In the context of the study supporting the Nicaraguan government in revising energy and power contracting procedures on the wholesale market and proposing lines of action to improve competition and promote private investment, it was determined that it would not be necessary to amend the sector's legislation, and only changes in standards and regulations would be made.

levels; (b) energy purchase and sale mechanisms; and (c) remuneration mechanisms; (v) Energy Cabinet approval of the draft Law on Energy Efficiency that will establish the legal and regulatory framework, containing institutional and financial mechanisms for promoting energy efficiency, and its submission as a bill to the National Assembly; and (vi) Energy Cabinet approval of the National Energy Efficiency Program submitted by the MEM, containing, inter alia, energy efficiency objectives and targets, responsibilities, functions, and roles of relevant sector participants, together with the necessary institutional and financial mechanisms. These policy commitments have already been satisfactorily met, with the exception of the distributed generation regulations, which are expected to be adopted in November 2017, once the reforms to the Electrical Industry Act have been enacted, as outlined in paragraph 1.14.

1.25 **Component V. Promoting regional integration of the electricity sector.** This component promotes regional electrical integration by increasing the participation of the national electricity sector in the regional electricity market.[39] This third PBP operation seeks to maintain the harmonization of national regulations and standards to the regional regulatory framework. Specifically, it calls for adjustments to be made to national regulations and standards that, as a result of the periodic evaluations performed by the Comisión Regional de Interconexión Eléctrica [Regional Electrical Interconnection Commission], prove to be necessary to maintain Nicaragua's adequate integration with regional regulation in the sector and guarantee that the SIEPAC line retains its transmission capacity for the regional system.[40] However, since disbursement of the second individual operation in the series, no national regulations and standards have been identified that need to be harmonized and adapted to the regional regulatory framework. At present, national laws and regulations are in line with the regional framework, so the policy commitments have been satisfactorily met.

C. Key results indicators

1.26 **Expected outcomes.** The Results Matrix describes the expected outcomes and the indicators associated with the program, which assess progress made by the program through the implementation of the three PBP operations. In terms of impacts: (i) improvement in the financial and management indicators of ENATREL, ENEL, and DISNORTE-DISSUR; and (ii) renewable energy's share in the SIN's generation matrix. In terms of outcomes: (i) improved electricity service; (ii) improved control of supply, normalization/formalization of customers; (iii) expansion of electricity coverage; (iv) reduction of total system losses; (v) publication of the financial statements of state companies in the sector; (vi) publication of the distributors' management indicators; (vii) additional renewable energy generation capacity in the SIN's generation matrix; (viii) reduced consumption of electrical

[39] This component has made it possible to: (i) adopt the Operating Regulations establishing operational rules, trade-related rules, and the interfaces necessary to harmonize national regulations with the regulations of the Regional Electricity Market; and (ii) approve changes in the Operating Regulations and their technical and commercial annexes, to harmonize with the procedure for implementing regional contracts prioritizing supply and secure rights, as established at the regional level.

[40] The investments required to ensure the capacity of the SIEPAC line are being fully financed by the IDB and other financing organizations.

power due to energy efficiency programs; and (ix) increased electricity exchange by Nicaragua in the regional electricity market. See the Results Matrix for more details.

1.27 **Economic evaluation.** Given the multidimensional nature of the activities supported by the program, a cost-benefit analysis was done on each of its objectives. The approach to the economic evaluation of the program consists of estimating the economic benefits and costs of the identifiable and quantifiable results associated with the program. Five specific actions were identified that will generate future benefits. The economic analysis of those actions yielded the following results:

Table 1. Specific Actions That Will Generate Future Benefits

Component	NPV Benefits (B) (US$ millions)	NPV Costs (C) (US$ millions)	B/C Ratio	IRR %
Improved service quality	16.2	12.4	1.31	12%
Increased electricity coverage	618	449	1.38	57%
Reduced losses	49	15	3.2	103%
Incentive for renewable energy	1,345	1,319	1.02	12%
Energy efficiency	108	11.5	9.3	Undefined

1.28 Reduced consumption of electricity due to energy efficiency measures shows an undefined internal rate of economic return given that annual benefits exceed annual costs throughout the program.

II. Financing Structure and Main Risks

A. Financing instruments

2.1 The program is structured as a PBP with three operations, each of which is contingent upon the achievement of institutional and sectoral policy targets over the short and medium term, following the provisions of the Guidelines for Preparation and Implementation of Policy-based Loans (document CS-3633-1). The PBP structure has been selected due to the flexibility it offers for achieving long-term objectives through the implementation of sequential short- and medium-term measures. This third operation provides financing of US$65 million within the framework of supporting broad fiscal requirements.[41] This operation represents 14.5% of Nicaragua's projected gross financing requirements[42] in 2017. The PBP structure offers flexibility for the design and implementation of the measures required to achieve the program's objectives. **The contractual conditions precedent to the sole disbursement of the single tranche corresponding to the third PBP include fulfillment, to the Bank's satisfaction, of the policy conditions indicated in Annex II (Policy Matrix), and on fulfillment of the other conditions established in the loan contract.**

[41] Document CS-3633-1, paragraph 3.27(b).

[42] Deficit financing needs after grants (in dollars). Source: 2017-2021 Medium-term Budgetary Framework.

B. Environmental and social safeguard risks

2.2 **Environmental considerations.** In accordance with Directive B.13 of the Bank's Environment and Safeguards Compliance Policy (document GN-2208-20, Operational Policy OP-703) and because this is a sector policy-based loan, no environmental impact classification is required. The program includes sector policy and institutional strengthening activities, so no adverse social or environmental impacts are expected as a result of the operation.

C. Other risks

2.3 **Fiduciary risks.** There is no fiduciary risk given the characteristics of the lending instrument adopted. The IDB supports the program through the operation, which will provide unrestricted funds and makes no provision for procurement. A single disbursement is expected to be made for all resources of the operation within a short period of time, so no fiduciary or execution risks are anticipated given that the borrower receiving the funds has prior experience in similar projects and possesses financial management instruments with necessary control systems. The financial management of the operation will utilize the country systems, the Integrated Financial Management and Administration System, using the Budget and Treasury modules, and the Integrated Financial Management System for accounting records and generating financial reports.

2.4 **Implementation risks**. Given that there are various governmental agencies involved in executing the policy reforms, there could be a risk of a lack of coordination among them. This risk is mitigated by making the Ministry of Finance and Public Credit (MHCP) responsible for monitoring and coordination, for calling regular evaluation and monitoring meetings to determine performance and outcomes with a view to identifying progress made, and for any additional support that may be needed to meet the conditions, as well as for the activities established in the Monitoring and Evaluation Plan.

2.5 **Sustainability of the reforms.** The sustainability of the reforms resulting from the policy commitments under the programmatic series of three operations will be based on: (i) the Nicaraguan government's commitment, which has taken shape through the fulfillment of the conditions that have been in place since the first operation in the series, and, in the case of the energy efficiency law, by working towards adoption of the law, which is not provided for in the condition; (ii) participation of the private sector and civil society, through consultations held to build consensus around new laws and regulations associated with the policy commitments; (iii) IDB support since the first operation in the series, through technical cooperation operation ATN/FI-14624-NI, Support for the Program to Strengthen the Energy Sector in Nicaragua, with specific attention to : the proposed targeting of subsidies, lines of action to improve competition in the generation market, the distributed generation regulations, and the implementation of tools for the operational security of the system; (iv) Bank support for the phase following the programmatic series, through technical cooperation operation NI-T1242 for Improved Competition in the Energy Generation Subsector, with the objective of developing a framework supplementing current legislation that covers the legal, commercial, and technical environment for the implementation of competitive procedures in the generation market for the electrical system and the addition of natural gas for generation; and (v) ongoing IDB

dialogue with the Nicaraguan government at the sector and macroeconomic levels for monitoring and support actions.

III. Management and Implementation Plan

A. Summary of implementation arrangements

3.1 **Beneficiary and executing agency.** The borrower will be the Republic of Nicaragua, acting through the Ministry of Finance and Public Credit (MHCP) as executing agency. The Policy Matrix was agreed upon with the electricity sector authorities (MHCP, MEM, INE, ENATREL, and ENEL). The MHCP will work with the relevant authorities to meet the agreed conditions of the Policy Matrix.

3.2 The MHCP will be responsible, inter alia, for: (i) managing fulfillment of the policy actions, coordinating the involvement of sector entities such as MEM, INE, ENATREL, and ENEL; (ii) preparing reports demonstrating that the conditions have been satisfactorily met and any other report the Bank may require for approving the disbursement; and (iii) once the program disbursements are completed, compiling and preparing the necessary information and performance indicators so that the IDB and the Nicaraguan government can monitor, measure, and evaluate program outcomes.

B. Summary of arrangements for monitoring results

3.3 The MHCP is responsible for coordinating with MEM, INE, ENATREL, and ENEL on implementation and monitoring of the policy actions, via the MHCP's liaison office with the IDB and under the direction of the Minister of Finance and Public Credit, establishing the frequency of monitoring in coordination with the IDB project team.

3.4 The borrower and the IDB have agreed to hold meetings to monitor and evaluate the Results Matrix, convened by the MHCP's liaison office with the IDB on dates to be determined by mutual agreement. In accordance with IDB policies, a project completion report (PCR) will be prepared, with IDB financing, upon completion of the programmatic series. Preparation of the report will be completed six months after disbursement the third programmatic policy-based loan. The PCR will evaluate the impact and outcomes obtained using the cost-benefit analysis methodology (according to the criteria of optional electronic link 1). The borrower will be responsible for cooperating with the IDB team and any consultants it may engage, in all matters related to the development of a monitoring and evaluation plan.

IV. Policy Letter

4.1 The Nicaraguan government has sent the Bank a Policy Letter describing the main components of the government's strategy for executing the program and reaffirming its commitment to the program's policy reforms.

Development Effectiveness Matrix		
Summary		
I. Corporate and Country Priorities		
1. IDB Development Objectives	**Yes**	
Development Challenges & Cross-cutting Themes	**-Productivity and Innovation -Economic Integration -Climate Change and Environmental Sustainability**	
Country Development Results Indicators	**-Regional, sub-regional and extra-regional integration agreements and cooperation initiatives supported (#)* -Government agencies benefited by projects that strengthen technological and managerial tools to improve public service delivery (#)* -Households with new or improved access to electricity supply (#)***	
2. Country Development Objectives	**Yes**	
Country Strategy Results Matrix	**GN-2683**	**Strengthen the sector framework to ensure financial and operational sustainability and attract private investment.**
Country Program Results Matrix	**GN-2884**	**The intervention is included in the 2017 Operational Program.**
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability	**Evaluable**	
3. Evidence-based Assessment & Solution	**7.4**	
3.1 Program Diagnosis	**2.4**	
3.2 Proposed Interventions or Solutions	**2.4**	
3.3 Results Matrix Quality	**2.6**	
4. Ex ante Economic Analysis	**8.5**	
4.1 The program has an ERR/NPV, a Cost-Effectiveness Analysis or a General Economic Analysis	**4.0**	
4.2 Identified and Quantified Benefits	**1.5**	
4.3 Identified and Quantified Costs	**1.5**	
4.4 Reasonable Assumptions	**0.0**	
4.5 Sensitivity Analysis	**1.5**	
5. Monitoring and Evaluation	**6.5**	
5.1 Monitoring Mechanisms	**2.3**	
5.2 Evaluation Plan	**4.2**	
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood	**Medium**	
Identified risks have been rated for magnitude and likelihood	**Yes**	
Mitigation measures have been identified for major risks	**Yes**	
Mitigation measures have indicators for tracking their implementation	**Yes**	
Environmental & social risk classification	**B.13**	
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.**
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Gender Equality		
Labor		
Environment		
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		
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan		

Note: (*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

This operation is the third and last of a PBP series with the general objective of supporting the GNI in the consolidation of a sectorial framework that guarantees the financial and operational sustainability of the sector. The program seeks: (i) macroeconomic stability; (ii) to ensure the financial sustainability of the electricity sector; (iii) to improve the transparency of results in the management of the sector; (iv) to promote a sustainable energy matrix, and (v) to promote the regional integration of the electricity sector.

The loan proposal presents a solid diagnosis of the problems and their determinants, which are linked to the interventions proposed. The document includes empirical data and information on lessons learned from other country operations, but does not have evidence (obtained through impact assessments) on the effectiveness of similar interventions.

The results matrix has a clear vertical logic for the proposed components, and indicators are SMART. The results of the program correspond to the conditions of the Policy Matrix and Verification Means, all of which have already been met in 2016. The impact indicators, also indicated in the Results Matrix, have targets which exceed the disbursement schedule of this operation.

The project includes a cost-benefit analysis for the program's expected results. It quantifies the economic benefits resulting from improvements in quality of service, expansion of electricity coverage, reduction of losses, and incentives to renewable energy. The results show positive current values and internal rates of return higher than 12%. The profitability is maintained under different sensitivity scenarios.

The monitoring plan details the monitoring instruments that will be used. The evaluation plan is based on an ex post economic analysis, including the methodology for data collection, work plan and allocated budget.

POLICY MATRIX

Objective:	To support the Nicaragua government in consolidating a sector framework to guarantee the financial and operational sustainability of the sector.

Objectives	Commitments First Programmatic Loan	Commitments Second Programmatic Loan	Commitments Third Programmatic Loan
Component I. Macroeconomic stability			
Stability of general macroeconomic policy framework.	1.1 Stable macroeconomic framework, conducive to achievement of program objectives and guidelines established in the sector Policy Letter.	2.1 Stable macroeconomic framework, conducive to achievement of program objectives and guidelines established in the sector Policy Letter.	3.1 Stable macroeconomic framework, conducive to achievement of program objectives and guidelines established in the sector Policy Letter.
Component II. Financial sustainability of the electricity sector			
Adopt a program of measures to recover the financial sustainability of the electricity sector.	1.2 Implement regulatory actions for the organization and stability of the sector, allowing for the recovery of financial sustainability at the distribution level. These actions are stipulated in Law 839 approved by the National Assembly, which includes:	2.2 Continue to implement regulatory actions for the organization and stability of the sector, allowing for the recovery of financial sustainability at the distribution level. These actions are stipulated in Law 839 approved by the National Assembly, and to this end:	3.2 Continue to implement satisfactorily regulatory actions for the organization and stability of the sectors, allowing for the recovery of financial sustainability of the electricity sector at the distribution level (measures provided in Law 839) and to this end:
	1. Changing the loss expansion factor recognized in rates from 1.13 (currently) to 1.16 with a gradual reduction to 1.14 in five years, so as to facilitate the distributor's financial recovery and give it incentives for managing the reduction of losses in upcoming years.	1. Implement the change in the loss expansion factor recognized in rates from 1.16 to 1.15 in the context of continuing the process of adjustment from 1.13 (in effect in 2013) to 1.16 with a gradual reduction to 1.14 in five years, so as to facilitate the distributor's financial recovery and give it incentives for managing the reduction of losses in upcoming years.	1. Implement the change in the loss expansion factor recognized in rates from 1.15 to 1.14 in the context of continuing the process of adjustment from 1.13 (in effect in 2013) to 1.16 with a gradual reduction to 1.14 in five years starting in 2013, so as to facilitate the distributor's financial recovery and give it incentives for managing the reduction of losses in upcoming years.
	2. Renewing the subsidy for settlements for five years. In the first year it will be 2.5%, and in the next four years it will be 2% of the energy sold at the average purchase price.	2. Reduce the subsidy for settlements from 2.5% (in effect in 2013) to 2% of the energy sold at the average purchase price.	2. Maintenance of the settlement subsidy at 2% of the energy sold valued at the average purchase price.
	3. Including in the basis for calculating the rate at the distribution level the financial costs of delayed payment to the generators in the period 2009-2013, and current interest until actual payment of debts incurred during that period.	3. Settlement between the generators and distributors (Electrical Distribution Company of the North (DISNORTE) and Electrical Distribution Company of the South (DISSUR) regarding the financial costs of delayed payment to the generators in the period 2009-2013 and current interest to be included in the basis for calculating the rate at the distribution level until actual payment of the debts incurred during that period.	3. issuance of debt securities that will make it possible to include the financial costs of arrears of payments to generators in the period 2009-2013 and current interest based on calculation of the rate at the distribution level until effective payment of the debts incurred during that period, in accordance with Article 113(5) of Law 272, maintaining the terms of the settlement by the generators and distributors (DISNORTE and DISSUR).

Objectives	Commitments First Programmatic Loan	Commitments Second Programmatic Loan	Commitments Third Programmatic Loan
	4. Extending the application of the antifraud regulations (Law 661 on the responsible use of energy), punishing energy theft to include all customers, consumers, and users of electrical service.	4. Continued application of the antifraud provisions contained in Law 661 "Law for the Distribution and Responsible Use of the Public Electricity Utility" punishing energy theft to include all customers, consumers, and users of electrical service.	4. Continued application of the antifraud provisions contained in Law 661 "Law for the Distribution and Responsible Use of the Public Electricity Utility" punishing energy theft to include all customers, consumers, and users of electrical service.
	5. Agreeing with the distributors (DISNORTE-DISSUR) on the obligation to carry out an investment plan for US$75 million over a period of five years, in order to improve the quality and control of electrical supply, expand coverage, and help to reduce losses.	5. Implementing the agreement with the distributors (DISNORTE and DISSUR), executing US$20 million from June 2013 to December 2014, in the context of the obligation to carry out an investment plan for US$75 million over a period of five years, in order to improve the quality and control of electrical supply, expand coverage, and help to reduce losses.	5. Continue to implement the agreement with the distributors (DISNORTE and DISSUR) executing the investment plan of US$75 million over a period of five years (2013-2018) in order to improve the quality and control of electrical supply, expand coverage, and help to reduce losses.
	1.3 Update electricity sector rates, updating the recognized costs of supply (increase of 14.9%), transmission (increase of 7.18%), distribution (increase of 1.82%), for a rate adjustment to the average sale price of 7.78%, consistent with the Results Matrix of the Bank's country strategy with Nicaragua (GN-2683).	2.3 The Nicaraguan Energy Institute (INE) performs periodic rate reviews and issues the corresponding resolutions on rate adjustments to the cost of supply, transmission, and distribution that allow for: (i) an increase in 2014 of 2.38% in the average sale price to the consumer, equal to the indicative sale price, thus ensuring that the price of energy offsets 100% of the costs of supply, transmission, and distribution; and (ii) a reduction of 8.47% in the average sale price to the consumer, in 2015, due to the reduction in oil prices, maintaining an energy price that offsets 100% of the costs of supply, transmission, and distribution.	3.3 The INE performs periodic rate reviews in the electricity sector and issues the corresponding resolutions on rate adjustments updating the cost of supply, transmission, and distribution making it possible to keep the average sale price to the consumer equal to the indicative sale price, thus ensuring that the price of energy offsets 100% of the costs of supply, transmission, and distribution.

Objectives	Commitments First Programmatic Loan	Commitments Second Programmatic Loan	Commitments Third Programmatic Loan
	1.4 Agree on guidelines and scope of the diagnostic and prepare a proposed adjustment plan for subsidies by the Nicaraguan government, designed to target and measure subsidies, giving priority to assisting the most vulnerable groups.	2.4 MHCP submission to the Energy Cabinet of proposed measures adjusting electricity sector subsidies, providing implementation recommendations based on the country's budgetary capacity and economic conditions for decision-making. The frame of reference for the proposal will include: (i) subsidies base with reference to historical rates is eliminated (2005 rate is currently used) and subsidies are determined as a percentage of the full rate in effect; (ii) consumption segment equal to or less than 150 kWh/month currently subsidized at 52.8% of the electricity rate becomes a range of subsidies varying between 0% and 50%, depending on consumption; (iii) the consumption segment equal to or less than 300 kWh/month currently subsidized at 100% in terms of the value-added tax (VAT) becomes a range of subsidies varying between 0% and 100%, depending on consumption; (iv) the retiree segment currently subsidized at 50% of the electricity rate becomes a range of subsidies varying between 10% and 25%; and (v) as a result, the total amount of subsidies may be reduced by 42.3% to 53.5%, depending on the scenario selected.	3.4 Energy Cabinet and Economic Cabinet approval of the proposed measures adjusting electrical sector subsidies submitted to it by the MHCP with submission to the Office of the President together with the targets to be achieved, actions to be taken, and schedule for their implementation. The frame of reference for the proposal will include: (i) an adjustment period starting in 2018 and ending in 2022; (ii) the subsidies base with reference to historical rates is eliminated and subsidies are determined as a percentage of the full rate in effect; (iii) until the end of the adjustment period in 2022, the social subsidy for the segment with consumption equal to or less than 150 kWh/month, currently subsidized at more than 50% of the full rate, will not be higher than the following percentages of the full rate in effect: 50% for the first 50 kWh, 45% for the next 50 kWh, and 25% for the last 50 kWh; (iv) until the fourth year in the adjustment period, 2021, the segment with consumption greater than 150 kWh/month, currently subsidized at a range of 53% to 100% in terms of the value-added tax (VAT), this subsidy is completely eliminated; and (v) until the end of the adjustment period in 2022, the subsidy for the retiree segment, currently defined at 50% of the electricity rate for the first 150 kWh consumed, will not be higher than 25% for consumption up to 300 kWh and is eliminated for consumption greater than 300 kWh.

Objectives	Commitments First Programmatic Loan	Commitments Second Programmatic Loan	Commitments Third Programmatic Loan
Component III. Transparency of results in sector management			
Establish mechanism to improve the transparency of results of public companies and concessionaires in the sector.	Continue to implement the mechanism ensuring transparency of results of public companies and concessionaires in the electricity sector through:		
	1.5 INE's publication on its website of contracts it has signed for financing of electricity rates for the period from April 2013 to March 2014.	2.5 INE's publication on its website of information on financing of electricity rates effective after March 2014;	3.5 INE's publication on its website of contracts it has signed for financing of electricity rates and its updated balance sheet.
	1.6 The National Electrical Transmission Company's (ENATREL) publication on its website of its audited financial statements for 2012, which are pending approval from the Office of the General Comptroller of the Republic of Nicaragua (Comptroller's Office).	2.6 The Nicaraguan Electricity Company's (ENEL) publication on its website of its audited financial statements for 2013, with approval from the General Comptroller of the Republic;	3.6 ENEL's publication on its website of its financial statements audited by independent auditors and approved by the Office of the General Comptroller of the Republic of Nicaragua (CGR), for each year in the period from 2012 to the year immediately prior to the year in which disbursement is made.
	1.7 INE's publication of wholesale cost deviations—reflecting the difference between the actual price to purchase electricity and the price recognized in the rates—for the first half of 2013.	2.7 ENATREL's publication on its website of its audited financial statements for 2013, with the approval of the Office of the General Comptroller of the Republic.	3.7 ENATREL's publication on its website of its financial statements audited by independent auditors and approved by the CGR, for each year in the period from 2012 until the year immediately prior to the year in which disbursement is made.
		2.8 INE's publication of the cost recovery index (combined rate). loss rate, and collection rate as supplied by DISNORTE and DISSUR, up to 2014	3.8 Each year the INE publishes the cash recovery index (combined index), the loss rate, and collection rate as supplied by DISNORTE and DISSUR.
		2.9 The INE has continued publication of wholesale cost deviations reflecting the difference between the actual electricity purchase price and the price recognized in the rates, for the years 2013 and 2014	3.9 INE's publication of wholesale cost deviations reflecting the difference between the actual electricity purchase price and the price recognized in the rates, for the period 2013 until the year immediately prior to the year in which disbursement is made.

Objectives	Commitments First Programmatic Loan	Commitments Second Programmatic Loan	Commitments Third Programmatic Loan
Component IV. Sustainable energy matrix, promotion of renewable energy, private investment, and energy efficiency			
Promote the use of renewable sources, distributed generation, private participation in the electricity sector, and energy efficiency, to achieve a sustainable energy matrix.	1.8 Improve new generation contracting procedures, as a stimulus for private investment, agreeing on guidelines and scopes for revision of the legal framework for new generation contracting procedures in the wholesale market, all of which will make it possible to define proposed lines of action for improving competition in those procedures to include, *inter alia*, improved rules for bidding and direct contracting, as well as identification of obstacles to entering the market and proposed solutions, in order to obtain prices that allow for reducing the rate to the end consumer.	2.10 Ministry of Energy and Mines (MEM) submission to the Energy Cabinet of proposed actions to improve energy and power contracting procedures in the wholesale market to stimulate private investment. That proposal will include: (i) comprehensive planning of the system to construct an efficient electricity matrix; (ii) timely introduction of competitive procedures to ensure renewal of more costly and inefficient generation; (iii) definition of facilities for competition in renewable resources projects with higher investment risk; and (iv) introduction of conditions for participating in the regional electricity market.	3.10 Energy Cabinet approval of actions to improve energy and power contracting procedures in the wholesale market to stimulate private investment, as submitted by the MEM, including, *inter alia*: (i) comprehensive planning of the system for building an efficient electricity matrix; (ii) timely introduction of competitive procedures for ensuring renewal of more costly and inefficient generation; (iii) definition of facilities for competition in renewable resources projects, with higher investment risk; and (iv) introduction of conditions for participation in the regional electricity market.
	1.9 Preparation, approval, and publication by the MEM of the 2013-2027 Indicative Generation Expansion Plan, to include generation projects based on renewable resources and incorporate National Interconnected System (SIN) quality criteria.	2.11 Preparation and approval by the National Load Dispatch Center, an entity of the National Electrical Transmission Company (ENATREL-CNDC) of an operational security methodology to periodically analyze the incorporate of new renewable energy projects in the Indicative Expansion Plan.	3.11 Approval by the MEM as a result of a biannual revision of the Indicative Expansion Plan. The approved plan or plans should include generation projects based on renewable resources and have been prepared on the basis of the operational security methodology defined by ENATREL-CNDC during the second operation under this programmatic series.
	1.10 Improve the process of planning expansion of the system, establishing an optimization instrument for periodic updating of the Indicative Expansion Plan, which evaluates the effect of newly introduced generation based on renewable energy in the SIN, with the MEM preparing an operational security study for 2015.	2.12 Definition by the ENATREL-CNDC of an operational security methodology to be implemented by the MEM and INE starting in 2015 for preparation of the Indicative Generation Expansion Plan	3.12 Confirmation by the ENATREL-CNDC that, based on the operational security methodology approved as a condition for the second operation, the 2017-2026 Indicative Generation Expansion Plans would guarantee compliance with the quality, security, and performance criteria.
	1.11 Establish the operational bases for distributed electrical generation, with the MEM developing proposed regulations for organization of distributed electrical generation to include, among other things, a minimum power level, an energy purchase and sale mechanism, and compensation mechanisms.	2.13 The MEM has established the scope for revision of the proposed regulations for distributed electrical generation in the country, in order to achieve regulations prepared with the participation of market agents at the generation, transmission, and distribution level. The scope will include: (i) power levels; (ii) energy purchase and sale mechanisms; and (iii) remuneration mechanisms;	3.13 National Assembly approval of changes needed in the Electrical Industry Act to facilitate approval of the regulations on distributed electrical generation and MEM approval of those regulations. The scope of the regulations will include: (i) power levels; (ii) energy purchase and sale mechanisms; and (iii) compensation mechanisms.

Objectives	Commitments First Programmatic Loan	Commitments Second Programmatic Loan	Commitments Third Programmatic Loan
	1.12 Develop the legal and regulatory framework for energy efficiency that contains institutional and financial mechanisms to encourage energy efficiency.	2.14 MEM submission to the Energy Cabinet of a draft law on energy efficiency that will establish the legal and regulatory framework, containing institutional and financial mechanisms for promoting energy efficiency;	3.14 Energy Cabinet approval of the draft law on energy efficiency that will establish the legal and regulatory framework, containing institutional and financial mechanisms for promoting energy efficiency, which has been forwarded as a bill to the National Assembly.
	1.13 Develop an energy efficiency policy, with the MEM drawing up proposed Energy Efficiency Policy Guidelines, to include expected objectives and targets, responsibilities, functions, and roles of relevant participants, and the necessary institutional and financial mechanisms.	2.15 MEM submission to the Energy Cabinet of a proposed national energy efficiency program containing, *inter alia*, energy efficiency objectives and targets, responsibilities, functions, and roles of relevant sector participants, together with the necessary institutional and financial mechanisms.	3.15 Energy Cabinet approval of the national energy efficiency program submitted by the MEM, containing, inter alia, energy efficiency objectives and targets, responsibilities, functions, and roles of relevant sector participants, together with the necessary institutional and financial mechanisms.
Component V. Promoting regional integration of the electricity sector			
Promote regional electrical integration by increasing the participation of the national electricity sector in the regional electricity market.	1.14 Adopt operational regulations establishing operational rules for the SIN and the National Transmission System (SNT), trade-related rules for the wholesale electricity market, and the interfaces needed to harmonize national regulations with regional ones, all of which will make it possible to operate on a coordinated basis with the regulations of the regional electricity market. Those operating regulations must include: • General standards; • Technical operating standards; • Commercial operating standards; and • Technical and commercial annexes to the standards.	2.16 Adjustments made by MEM, INE, or the appropriate authority to national regulations and standards that, as a result of periodic evaluations performed by the Regional Electrical Interconnection Commission (CRIE), prove to be necessary for maintaining Nicaragua's appropriate integration with regional regulations for the sector and for ensuring that the Central American Electrical Interconnection System (SIEPAC) line retains its transmission capacity for the regional system. In 2015 the MEM will approve: amendments to the operating regulations and their technical and commercial annexes, to harmonize them with the implementing procedure established by the CRIE for implementing regional contracts with priority given to supply and secure rights.	3.16 Make adjustments to national regulations and standards that, as a result of periodic evaluations performed by the CRIE, prove to be necessary for maintaining Nicaragua's appropriate integration with regional regulations for the sector and for ensuring that the SIEPAC line retains its transmission capacity for the regional system.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/17

Nicaragua. Loan ____/BL-NI to the Republic of Nicaragua
Program to Strengthen the Electricity Sector
in Nicaragua III

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 Nicaragua, as Borrower, for the purpose of granting it a financing to cooperate in the execution of the Program to Strengthen the Electricity Sector in Nicaragua III. Such financing will be chargeable to the Bank´s Ordinary Capital (OC) resources in the following manner: (i) up to the amount of US$26,000,000, subject to concessional financial terms and conditions ("Concessional OC"); and (ii) up to the amount of US$39,000,000, subject to financial terms and conditions applicable to loan operations financed from the Bank's regular program of OC resources ("Regular OC"), as indicated in the Project Summary of the Loan Proposal, and subject to the Special Contractual Conditions of said Project Summary.

(Adopted on ___ _____ 2017)

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