PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE

Report No.: PIDA12990

Project Name	Distribution Grid Modernization and Loss Reduction Project (P147277)
Region	LATIN AMERICA AND CARIBBEAN
Country	Dominican Republic
Sector(s)	Transmission and Distribution of Electricity (100%)
Theme(s)	City-wide Infrastructure and Service Delivery (80%), Urban Economic Development (20%)
Lending Instrument	Investment Project Financing
Project ID	P147277
Borrower(s)	DOMINICAN REPUBLIC
Implementing Agency	CDEEE, SIE
Environmental Category	B-Partial Assessment
Date PID Prepared/Updated	21-Oct-2015
Date PID Approved/Disclosed	22-Oct-2015
Estimated Date of Appraisal Completion	16-Sep-2015
Estimated Date of Board Approval	16-Dec-2015
Appraisal Review Decision (from Decision Note)	

I. Project Context

Country Context

1. Despite rapid growth over the past few decades, the Dominican Republic (DR) continues to experience high levels of poverty and inequality. Between 1991 and 2014, Dominican Gross Domestic Product (GDP) grew at an average annual rate of 5.3 percent, among the highest growth rates for Latin America and the Caribbean over the same period, which led to sustained convergence in GDP with the rest of the region. GDP growth is projected to remain strong in 2015 (5 percent) and 2016 (4.7 percent). This sustained growth, however, did not translate into a reduction of poverty during the period: in 2013, 41 percent of the country's population was living in moderate poverty, up from 32 percent in 2000, and above the average for the region. Moreover, inequality as measured by the Gini coefficient reduced from 0.51 in 2000 to 0.48 in 2010, a reduction equivalent to about half of that experienced across the region.

Sectoral and institutional Context

2. The DR's electricity market comprises separate generation, transmission, and distribution companies. Privately owned generation capacity accounts for 67 percent of the country's total

installed capacity (1,744MW) with the remainder being public-private and purely public companies. The majority of electricity is generated using fuel oil (37.2%) and natural gas (30.9%), with the rest coming from coal (14.3%), hydro (13.2%), and wind (4.4%). The Electricity Transmission Company (ETED) is the public company in charge of electricity transmission, and there are three state-owned regional distribution companies (EDE Norte, EDE Sur, and EDE Este). The Corporation of Dominican State Electricity Companies-Corporación Dominicana de Empresas Eléctricas Estatales (CDEEE) is the public holding company that leads and coordinates these power companies. The Market Coordinator (OC-SENI) controls the contract and spot market, while the Superintendence of Energy (SIE) is responsible for regulating the sector, including service quality and tariffs. The National Energy Commission (CNE) is responsible for energy planning and policy-making.

3. Distribution Companies: A crucial factor in the performance of the Dominican electricity sector has been governance of the state-owned utilities. To address the problems in the sector, reforms were implemented with unbundling and adoption of a new Electricity Law. In the 1990's, the state owned Dominican Electricity Corporation (CDE) was unbundled into two generation companies and three regional distribution companies (EDEs). The EDEs were originally privatized, but then sold back to the Government by 2009 due to their poor financial situation. More than half the clients of the EDEs are not metered, and losses come primarily from unbilled energy rather than unpaid energy bills. In neighborhoods in which the unbilled energy, which includes theft, reaches high levels in the absence of individual metering, electricity has to be cut back for whole neighborhoods. Each EDE controls about a third of the total market of electricity users. All three EDEs are financially unsustainable due to a combination of electricity retail tariffs set below cost recovery levels, high technical and commercial losses, and poor revenue collection. Governance deficiencies remain and a chain analysis was conducted and recommendations for improvements were made in the Governance Study carried out by the World Bank. Significant potential for governance improvements lies in the enhancement of management processes at CDEEE and EDEs, and more specifically, enhancements that can be attained through investment in information systems. The Government has had to subsidize the power sector deficit to keep the EDEs afloat and enable them to pay ETED and the generators. The power sector deficit is a result of a decision not to adjust tariffs to cover rising fuel costs, as well as due to poor commercial performance and high losses by the EDEs. The deficit has grown from US$700 million in 2010 to US$1.3 billion in 2014, about 2 percent of the country's GDP. This situation hinders the country's economic competitiveness and growth and consequently electricity is considered the biggest obstacle to doing business in the DR.

4. In 2009, the Government developed a comprehensive Power Sector Action Plan with support from the World Bank, the Inter-American Development Bank (IDB), and the International Monetary Fund (IMF) to implement needed reforms to achieve financial sustainability of the sector and address its structural problems. The Government implemented this intensive reform program from 2009-2012 and made significant progress such as: (i) investment to reduce distribution technical and commercial losses in distribution; (ii) eliminating the Blackout Reduction Program (BRP) geographic subsidy and replacing it with the pro-poor targeted subsidy program for residential customers; (iii) replacing the management teams of the EDEs through a competitive process; (iv) designing and implementing new measures to enhance transparency and cost reductions; and (v) making tariff adjustments in 2009, 2010, and 2011 (resulting in tariff increases of 12.5 percent, 11 percent, and 8 percent, respectively).

5. Under the current administration, CDEEE developed a new Integral Electricity Sector Plan (2014-2017) which focuses on three key pillars: (i) Modification of the Generation Matrix; (ii) Loss Reduction; and (iii) Management Efficiency. Since 2012 the Government has prioritized the implementation of Pillar I by (i) signing of a new contract with AES Corporation, a private power company, to install additional natural gas power generation capacity; and (ii) procuring and initiating the construction of two new coal plants (384.9 MW each). Construction began in late 2014 and the plants are expected to enter into operation by 2017. The Government also passed a new Electricity Law to create a Ministry of Energy and Mining (MEM), although CDEEE will retain its current functions in order to complete the actions under the Integral Plan. CDEEE is now beginning work on the Loss Reduction Pillar, which originally had the objective of achieving a 10.4 percent reduction in distribution losses (from 35.6 percent in 2014 to 25.2 percent in 2017). CDEEE has since reduced its loss reduction goal to a more achievable 6 percent due to insufficient funds to carry out all planned loss reduction measures. To achieve this goal, CDEEE has developed the following investment plan: (i) rehabilitation of networks and installation of meters for existing clients and for those with illegal connections; (ii) remote metering and macro metering program; (iii) community outreach activities; (iv) improving commercial management and infrastructure improvement; and (iv) institutional strengthening.

6. The Government issued a Presidential Decree to convene stakeholders to begin preparation of an Electricity Pact intended to achieve a broader political consensus on essential power sector reforms. The ‘Electricity Pact Initiative’ was officially launched by the Government in January 2015 and is currently under development. CDEEE conducted a series of consultations with the major stakeholders involved in the electricity sector, including public and private electricity companies and business and industry groups, to determine the main topics to be included in the Electricity Pact. The agreed topics are: (i) Regulatory Framework; (ii) Distribution; (iii) Generation; (iv) Transmission; (v) Finance and Tariffs; and (vi) End-users and Non-regulated consumers. The topics proposed by CDEEE are consistent with the objectives of this project.

7. Based on the unaudited financial statements for 2014, the three EDEs continue to incur substantial operating losses. These losses arise from a combination of (i) electricity sales tariffs that are substantially below full cost recovery levels; (ii) high levels of technical and commercial losses; and (iii) poor revenue collection performance. A summary of the key financial indicators for the three EDEs. These indicators show that all three EDEs have substantial operating cash gaps as indicated by the Cash Recovery Index (CRI). Despite some gradual improvements in recent years, the CRI for all three EDEs remain significantly low and need to be improved. In the absence of the project and realistic tariff increases, the financing gap of, and resulting budget support for the distribution system is likely to increase without bound. Moreover, as cash recovery improves with strengthened distribution systems and improved commercial management, it will be important to monitor and enhance overall operational efficiency in the EDEs so that the enhanced cash recovery leads to significantly reduced subsidies to the sector.

8. The World Bank has financed the following projects: (i) The Programmatic Power Sector Reform Loan (US$150m); (ii) the Energy Sector TA Loan (US$7.3m) and from 2008-2013, an Electricity Distribution Rehabilitation Project (US$42 million) to focus on accelerating the EDEs’

efforts and prior successes under the '24 Hours of Light Program'. The achievement of the project development objectives for the latest project were: Average Service Availability Index (ASAI) above average for all three EDEs; CRI targets at the EDEs level were not met due to the limited scope of the project but the targets were 14-28 percent above the original target levels in the rehabilitated distribution circuits. Therefore, it is important for the Bank to continue to be involved in the sector for the economic development of the country given the high economic costs and losses associated with an unreliable and poor electricity service and with alternative private solutions (e.g. inverters, generators, etc.) as well as the adverse social impacts on levels of crime, health, and general well-being. The Bank has been engaged in this sector and needs to remain engaged to build on successes achieved and complete this critical and challenging reform agenda. In addition, lessons learned from the Bank's involvement include: (i) the crucial importance of citizen engagement and community participation to break the vicious cycles of poor recoveries and poor service delivery, and (ii) the need to not just rehabilitate networks but convert users into clients and strengthen the commercial performance of the distribution companies.

9. The proposed project is part of the Dominican Republic strategic "Distribution Grid Modernization and Electrical Losses Reduction Program", which is supported by: the World Bank (US$120m), the EIB (US$100m), the IDB (US$78m), and the OPEC/OFID (US$60m). The overall objective is to reduce the levels of losses in the rehabilitated circuits from the 32.1 percent to 25.2 percent in four years (2015-2019). The program has been designed by CDEEE to ensure complementary investments by the donor partners in their respective projects to achieve the overall objectives of the program. Like the World Bank, the other development partners will also provide support for rehabilitating priority electricity power circuits in the EDEs, upgrading metering systems, social outreach efforts, and institutional strengthening. The World Bank project will finance: (i) the rehabilitation of 18 distribution circuits; (ii) the replacement of conventional meters with remote meters; (iii) the installation of remote metering systems; (iv) the increase of the number of hours of electricity supply in all rehabilitated circuits; and (v) commercial management support to improve revenue collection and enhance overall business performance. The importance of complementing investment in distribution rehabilitation with support to improve commercial management is a key lesson learned from the previous project. The project will also help raise awareness on the rational use of electricity and encourage energy efficiency actions. The project's goal is to reduce the commercial losses in the 18 rehabilitated circuits by an estimated 25 percent (from 39 percent to 13.5 percent on average). This will have a positive impact on the financial situation of the EDEs and increase the CRI by 25 percentage points on average in the rehabilitated circuits and thereby help to reduce overall distribution system losses by an estimated 1.8 percent out of a total of 6 percent with all the IFIs combined; i.e., IDB, OFID, EIB, and WB. In addition, the project will improve the management of environmental waste generated by rehabilitation of networks. The World Bank project will be a stand-alone project that fits within the CDEEE's overall DR 'Distribution Grid Modernization and Loss Reduction Program.'

10. This project is essential to help reduce commercial distribution systems losses in the DR in order to improve the financial situation of the EDEs, their ability to increase electricity service availability, and to reduce "programmed" blackouts. The World Bank is well placed to provide this support as it has been involved in the DR electricity sector for over a decade, including through successful implementation of the Electricity Distribution Rehabilitation Project that this project will build on. Although other IFIs are also engaged in the program, the WB project is imperative as the distribution loss reduction investment requirements are substantial, estimated to be approximately US$800 million. The proposed project will not directly tackle tariff issues as the Government plans

to first lower electricity costs through modifying the generation mix and reducing distribution losses before considering tariff adjustments so that the required adjustments will be lower and, if accompanied by better service quality, will become more socially acceptable. However, the Regulator, SIE is currently updating a 2012 tariff study which was done originally by the World Bank with financial support from the IDB. SIE will also undertake a complementary study of the currently ongoing study with proceeds from this loan to be completed by 2017.

11. The investments to modernize the electricity distribution networks will help reduce chronic power shortages, reduce unreliable performance, and improve service availability in the rehabilitated circuits which served around one million people, 41 percent of them low-income population and 51.4 percent women. Improvement of service availability will reduce the need for expensive power self-supply and facilitate business activity, thus improving the long-term competitiveness of the Dominican economy and quality of life of end-users. Improved data quality through IT investments, formulation of rolling five year business plans, and independent annual financial audits consistent with international financial reporting standards will contribute to better internal management, reporting and corporate governance of the distribution companies.

12. The proposed project is fully consistent with the country's National Development Strategy for 2030 and with two of the main pillars of CDEEE's Integral Electricity Sector Plan (2014-2017): (i) the Loss Reduction; and (ii) the Management Efficiency. In addition, the project is expected to be consistent with the Electricity Pact and is aligned with the World Bank's Energy Sector Directions Paper, with the main objective for WB engagement in the energy sector to "support its client countries in securing affordable, reliable, and sustainable energy supply needed to end poverty and promote shared prosperity." It is also consistent with one of the main objectives of the Sustainable Energy for All Initiative to be achieved by 2030, i.e., 'doubling the global rate of improvement in energy efficiency'.

13. The proposed project is consistent with the Dominican Republic's Country Partnership Strategy (CPS) for FY 2015-2018, which is designed to support the Government's effort to make growth sustainable and more inclusive. In the current CPS, the activities are aligned with the second strategic results area, namely improving access to efficient and reliable electrical distribution networks, ICT, and other infrastructure. A core outcome in this results area is to ensure improved efficiency and reliability of the electricity sector, measured among others by a reduction on commercial losses. The CPS mentions the proposed project for achieving this outcome.

II. Proposed Development Objectives

The project development objective is to improve the financial viability of the electricity distribution companies (EDEs) by reducing energy losses and increasing revenue collections in the circuits rehabilitated under the project and consequently increase the supply of electricity. .

III. Project Description

Component Name

Rehabilitation of Distribution Networks in selected areas of the EDEs and Upgrade of Metering Systems. Implementation of Environmental Management Plan.

Comments (optional)

Investments include (i) the supply and installation of remote metering and remote switching (disconnection and reconnection) systems for end-users in LV residential and commercial circuits; (ii) the eradication of illegal connections with anti-theft MV and LV networks; (iii) replacement of

obsolete/overloaded MV and LV power lines and transformers and (iv) the supply and installation of macro-metering equipment in mid-voltage branches and micro-metering in power transformers to monitor power flows, overloads, energy balances, and commercial loses and (v) development of and environmental management plan and upgraded monitoring and management of residues sites, following international best practices for hazardous waste management.

Component Name

Citizen Engagement and Community Participation

Comments (optional)

The component will implement a Social Management Strategy (SMS) aimed at: (i) restoring the confidence between users and EDEs; (ii) increase cash collection levels; (iii) efficient and safe use of electricity. Leaders and communities will be informed of the grid modernization woks and will be organized to participate during project implementation. Social Compacts will be signed between the EDEs and the communities to reflect: a) reached agreements on the number of hours of electricity to be delivered daily by the EDEs; b) the legalization of illegal users; and c) payment of the electricity bills. Communities will be trained on: a) the safe and efficient use of electricity, and b) the rights and duties as regular clients. The component finances pre/post Customer Service Satisfaction Surveys

Component Name

Commercial Management and Project Management, Monitoring and Evaluation of the Loss Reduction Program

Comments (optional)

This component will finance consulting services to: (i) improve the commercial management of the EDEs; (ii) integrate the corporate IT systems of CDEEE and the EDEs to improve corporate process; and (iii) strengthen the coordination and monitoring of the rehabilitation projects. Significant potential for governance improvements recommended in the Governance Study conducted by the World Bank lies in the enhancement of management processes at CDEEE and EDEs, through investment in information systems. This project will include the integration of commercial, financial and accounting systems and standardization of reporting to help establish transparent process to facilitate quality business data to top management and market regulator and provide access to real time operational information.

Component Name

Complementary Tariff Study

Comments (optional)

The Electricity market Regulator (SIE) is currently undertaking an update of a Tariff Study (an IDB loan) to assess and update the levels of the current electricity tariffs in terms of cost-recovery. This component will finance a complementary study (to be completed within two years from project implementation by 2017) to weight the social implications of the changes in the tariff rates and recommended mitigation measures and grid-path implementation of the tariff levels proposed in the ongoing Tariff Study supported by the IDB.

IV. Financing *(in USD Million)*

Total Project Cost:	120.00	Total Bank Financing:	120.00
Financing Gap:	0.00		
For Loans/Credits/Others			**Amount**

Borrower	0.00
International Bank for Reconstruction and Development	120.00
Total	120.00

V. Implementation

14. CDEEE will be the Bank's main counterpart for the implementation of the project, and the project coordinator for Components 1, 2, and 3. The Bank's team has assessed the implementation structure of CDEEE. The Project Implementation Unit (PIU) staff is well qualified and has gained experience from implementation of previous projects. Furthermore, CDEEE is also responsible for implementing projects in the sector from other IFIs, and it has the capacity to take on this new project. CDEEE has also been training its staff, as well as staff in the EDEs in Project Management and is enhancing its overall structure. The EDEs are each setting up their own Project Management Units (PMU) to enable them to cope with the increase in activities from other IFIs and to implement this project. Since environmental aspects are important, CDEEE has agreed to set up and staff an environmental unit in the PIU. SIE will be the implementing agency for Component 4. The Financial Management and Procurement assessment of the agency is done .

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	×	
Natural Habitats OP/BP 4.04	×	
Forests OP/BP 4.36		×
Pest Management OP 4.09		×
Physical Cultural Resources OP/BP 4.11	×	
Indigenous Peoples OP/BP 4.10		×
Involuntary Resettlement OP/BP 4.12		×
Safety of Dams OP/BP 4.37		×
Projects on International Waterways OP/BP 7.50		×
Projects in Disputed Areas OP/BP 7.60		×

Comments (optional)

VII. Contact point

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