

## PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC7076

<b>Project Name</b>	DO Distribution Networks Rehabilitation (P147277)
<b>Region</b>	LATIN AMERICA AND CARIBBEAN
<b>Country</b>	Dominican Republic
<b>Sector(s)</b>	Transmission and Distribution of Electricity (100%)
<b>Theme(s)</b>	Public expenditure, financial management and procurement (60%), Urban Economic Development (20%), City-wide Infrastructure and Service Delivery (20%)
<b>Lending Instrument</b>	Investment Project Financing
<b>Project ID</b>	P147277
<b>Borrower(s)</b>	DOMINICAN REPUBLIC
<b>Implementing Agency</b>	CDEEE
<b>Environmental Category</b>	B-Partial Assessment
<b>Date PID Prepared/ Updated</b>	31-Oct-2014
<b>Date PID Approved/ Disclosed</b>	03-Nov-2014
<b>Estimated Date of Appraisal Completion</b>	13-Mar-2015
<b>Estimated Date of Board Approval</b>	22-May-2015
<b>Concept Review Decision</b>	Track II - The review did authorize the preparation to continue

### I. Introduction and Context

#### Country Context

- Over the past decade, the Dominican Republic (DR) has been one of the fastest growing economies in Latin America, but poverty and inequality remain significant issues. The GDP growth rate for the DR was 5.1 percent between 2002 and 2012, almost 50 percent higher than the average growth rate for Latin America. However, extreme poverty remains high at 34.3 percent, with a Gini coefficient of 0.51, despite the GNI per capita (with a 2013 estimated population of 10.3 million) rising from US\$2,620 to US\$5,744 in the decade.
- The country is vulnerable to shocks and economic short term forecasts are not very positive. The deficit for 2012 was about 6.6 percent of GDP (as compared to 2.6 percent of GDP in 2011). The main drivers of the persistent inequality are structural and are exacerbated by external shocks such as fuel price increases and natural hazards (earthquakes and hurricanes).

3. The political context is currently stable. The government elected in August 2012 declared promotion of transparency and governance, jobs formalization, strengthening the economy, and improvement of the quality of public services as areas of focus.

### **Sectoral and Institutional Context**

4. Growth in tourism and Free Trade Zones (FTZ) in the DR have caused the service sector overtake agriculture as the leading employer, which together with mining are the most important sectors in terms of export earnings. The FTZ industry employs around 20% of the workforce and makes up around US\$ 5 billion in exports. Tourism employs around 3% of the workforce and represents more than US\$ 2 billion in annual earnings. About 500 companies situated in 50 industrial free zones around the country manufacture goods for the US market. A major concern in the country is the poor reliability and efficiency of the public electricity sector and its inability to establish financial viability. Therefore, addressing the issues of the electricity sector is of prime importance to; (i) provide reliable and affordable supply of electricity to enhance competitiveness across all economic sectors, (ii) reduce suppressed demand and improve social and economic prosperity, (iii) reduce subsidies to the sector and ensure fiscal sustainability in the country, (iv) provide a major boost to private sector development and sustained economic growth leading to gradual poverty reduction. The three distribution utilities (Empresas de Distribución Eléctrica, EDEs) and the transmission Empresa Transmisora de Eletricidad Dominicana (ETED) have seen a deterioration in their commercial and operational performance, which is contributing significantly to the sector's fiscal cost and underperformance. Commercial losses are partially attributable to (i) poor metering, (ii) poor billing, (iii) poor collection, (iv) unpaid bills, (v) weaknesses in the administration and management of the EDEs and ETED, (vi) ineffective subsidies, (vii) below-cost electricity tariffs, and (viii) electricity theft. It is, therefore, critical to improve the commercial and technical performance of the EDEs, including through better invoicing and collection, elimination of illegal connections and non-payment of bills, progressive adjustments to tariffs, stronger governance and monitoring of the EDEs, enhanced financial reporting and transparency.

5. In 1998-1999 the sector was unbundled and the Corporación Dominicana de Electricidad (CDE) gave way to the creation of various private generation companies and three distribution companies - Empresas Distribudora de Electricidad (EDEs). In 2003, owing to increasing oil prices, newly introduced subsidies, and strong political interference, the sector's financial health was negatively affected and triggered the government's decision to repurchase Union Fenosa's shares in the EDEs EdeNorte and EdeSur, and 50% ownership of AES' EdeEste.

6. Despite some improvements, the electricity crisis has persisted in the DR throughout the last decade. The pace of much needed sector reform has been slow and its implementation uneven. Major problems currently facing the sector are: (i) dependence on high cost power generation, mostly in the private sector, based on imported fuel; (ii) inadequacy of electricity sales tariffs leading to financial constraints for the three distribution companies (EDEs); (iii) the resulting deterioration in the efficiency and service quality of the EDEs have led to increasing resistance from the customers to make payments; and (iv) substantial levels of commercial losses through unauthorized connections and non-payments. From a population of approximately 10 million, only 2,169,662 are registered customers, of these 19.4% (421,264 clients) do not make any payments and just 38% (823,810 clients) enjoy a 24-hour service.

7. The impacts are high on the level of service and on the sector's overall sustainability. The

power sector in the Dominican Republic holds up the country's economic growth. The volume of unserved demand is high and the level of service to many areas can be as low as 6 hours per day, mostly due to financial causes (i.e. high system losses and low bill collection) and inadequate level of investments. In 2012, the EDEs registered, on average, distribution losses of 35.6 percent. The high cost of electricity production due to imported fuel prices, coupled with the EDEs severe financial constraints, have required the government to progressively increase the levels of budgetary support to the sector. In 2011, with the sharp increase in fuel prices, the transfers amounted to about US\$690 million or 2.1 percent of GDP. In 2013, the budgetary transfers were reportedly over US\$ 1.25 billion corresponding to above 3% of the GDP. Specialists' sectoral studies indicate that the technical and non-technical losses of energy in the distribution equals on average to an aggregate of US\$52 million per month for the three EDEs. This problem increases to the extent that the demand grows and to the extent that the distribution infrastructure deteriorates from underinvestment. Therefore all effective actions undertaken and investments made to reduce losses of the EDEs, also potentially contribute to the reduction of the country's budgetary deficit.

8. The Distribution business of the industry is the most dysfunctional. Distribution losses in the country have sharply increased in recent years. The problem of commercial losses stems from: (i) the vulnerability of deteriorated networks, (ii) the culture of non-payment in a high percentage of users of the service, which is induced by discontinuity of the service and high energy costs, (iii) energy theft and sophistication of non-authorized connections, (iv) technical abnormalities along circuits, (v) lack of sufficient commercial data, (vi) poor operation and maintenance due to lack of resources, (vii) poor business management due to insufficient IT tools and networks that would adequate business and technical management (viii), inadequate levels of investment to embark on preventive and corrective measures to solve the problem of losses.

9. Since 2009, the Government has been taking a number of steps towards further sector reform. These include: (i) a Power Sector Action Plan for 2010-2015, prepared with the assistance of the Bank and IDB, focusing on the following critical areas: tariffs, subsidies, losses, governance and operational management, institutional strengthening, and priority investments. This was followed by preparation of strategic studies to better align the Action Plan with the 2030 National Development Strategy. In 2013, the Parliament adopted a law for the creation of a Ministry of Energy and Mining. If properly implemented, this could be an important step in improving the governance and management of the DR electricity sector.

10. The World Bank has had a long engagement with DR electricity sector, including through the recently closed Distribution Rehabilitation and Loss Reduction Project (2008-2013, P089866). Capitalizing on the progress made, other IFIs, including the Inter-American Development Bank (IDB) and the OPEC Fund for International Development (OFID) have also financed projects to improve the sector. The Government has negotiated a new loan (US\$60 million) with OFID and the IDB is preparing a new operation (US\$78 million) to continue to support the sector. The European Investment Bank (EIB) has shown an interest to match the World Bank's proposed new loan (US \$120 million) with a similar contribution of US\$120 million.

### **Relationship to CAS**

11. The proposed activities under the new project are fully consistent with the Country Partnership Strategy (CPS) 2015-2018. In the current CPS, the activities are aligned with the results area 2: improving access to efficient and reliable electrical distribution networks ICT and other infrastructure. The main outcome for this results area regarding the electric sector is the (1)

improved efficiency and reliability of the electricity sector, measured, among others by a reduction in commercial losses. The proposed project is fully consistent with these objectives.

## II. Proposed Development Objective(s)

### Proposed Development Objective(s) (From PCN)

11. The proposed project development objective is to help the three distribution companies (EDEs) to improve their operational and commercial performance through: (i) reduction of energy losses in the distribution networks; (ii) the rehabilitation of selected circuits, (iii) the normalization of non-authorized users in rehabilitated circuits (iv) the deployment of remote metering and macro-metering systems to pinpoint theft, (v) the increase of the availability of energy supplied, and (vi) the improvement of billing and cash collection.

### Key Results (From PCN)

12. The primary beneficiaries of the project will be the three distribution companies (EDEs) through the project-supported investments in (i) network rehabilitation and modernization and (ii) institutional strengthening. The final beneficiaries will include the direct customers of the EDEs, and more generally, the DR population at large that would benefit from the expansion of economic benefits enabled by a more efficient, reliable and safe power supply. It is estimated that the loss-reduction program in the Dominican Republic will impact a total of 1,193,000 users, among which are those to be normalized through the networks rehabilitation projects and those to be remotely metered. These users will enjoy better service availability, improved street lighting, better maintenance and swift responsiveness, thus resulting in overall higher service quality.

13. Key outcome indicators to measure the progress of the project objectives are:

Indicator One: Drop of distribution commercial losses in circuits rehabilitated by the project (KWh of energy sold/rehab. circuit)

Indicator Two: Distribution lines constructed or rehabilitated under the project (km) (Core)

Indicator Three: Number of clients normalized and new clients registered through the metering equipment installed under the project. (Number of newly incorporated clients by intervened area/EDE)

Indicator Four: Increase of recovered energy at each of the EDEs (recovered kWh/monitored circuit)

Indicator Five: Minimum average level of electricity service observed in the circuits covered under the project; (Number of hours of daily energy supply/intervened area)

Indicator Six: Increase of cash collection and cash flow at each of the EDEs (US\$)

## III. Preliminary Description

### Concept Description

15. Concept. The proposed project seeks to build on the significant successes under the Distribution Rehabilitation and Loss Reduction Project (as confirmed in the Implementation Results and Completion Report – ICR) while recognizing the limitations in regard to the impact that a single such project can have on ensuring the EDEs overall financial sustainability. In this regard, the proposed project takes into account the findings and lessons learned reflected in the ICR. The proposed project it is part of the coordinated support (with the other IFIs) to the Government in its power distribution loss reduction program and as such would scale up the first project's notable achievements which included securing and exceeding the targets in regard to outcomes at the level of the circuits actually rehabilitated under the project. Furthermore, the project allows for

coordination for an additional US\$100 million from the European Investment Bank. Although not proposed as an objective under the project (taking into account the ICR findings), the proposed project would help the EDEs move, through increased efficiency in technical and commercial operations, towards eventual financial sustainability. In continuity of the first project that closed on September 30, 2013, the proposed project's activities will continue to: (i) improve the quality of service by expanding the provision of 24-hour service; (ii) increase the number of regularized customers receiving electricity service; (iii) help the EDEs increase their revenue collection rates through improved quality of service and social contracts with the consumer communities; and (iv) help the EDEs strengthen their institutional capacity for commercial activities, including billing and collection.

16. The proposed US \$ 120million project consists of the following four components:

- |      |                                                                                                                                      |                     |
|------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 1.   | Infrastructure Rehabilitation                                                                                                        | (US \$              |
|      | 103.7million)                                                                                                                        |                     |
| 1.1. | Remote Metering Systems                                                                                                              | (US \$              |
|      | 24.12million)                                                                                                                        |                     |
| 1.2. | Grid Rehabilitation and Modernization                                                                                                | (US \$              |
|      | 74.7million)                                                                                                                         |                     |
| 1.3. | Grid metering and monitoring                                                                                                         | (US \$              |
|      | 4.87million)                                                                                                                         |                     |
| 2.   | Commercial TA to the EDEs                                                                                                            | (US \$              |
|      | 3.60million)                                                                                                                         |                     |
| 3.   | Social Management                                                                                                                    | (US \$              |
|      | 4.56million)                                                                                                                         |                     |
| 3.1. | Social Management Plans                                                                                                              | (US \$ 3million)    |
| 3.2. | Communication Campaigns                                                                                                              | (US \$              |
|      | 1.56million)                                                                                                                         |                     |
| 4.   | Coordination Monitoring and Evaluation                                                                                               | (US \$              |
|      | 8.24million)                                                                                                                         |                     |
| 4.1. | Institutional Strengthening and Integrating an IT platform for CDEEE and the EDEs, and Forecasting and demand analysis Software tool | (US \$ 5.24million) |
| 4.2. | Coordination and Monitoring of the Distribution Rehabilitation Program                                                               | (US \$ 3million)    |

17. Component 1: Rehabilitation of power distribution grids and normalization of clients in targeted areas. (Indicative cost: US\$103.7 million). Based on rehabilitation action plans elaborated by the EDEs and CDEEE, this component will finance: (1.1) the supply and installation of a remote metering system and equipment for the large customers connected to the medium voltage networks and the small – residential and commercial – customers located in energy intensive networks; (1.2) rehabilitation of medium and low voltage circuits in the targeted areas (about 33 circuits for the three EDEs); and (1.3) supply and installation of macro-metering equipment in mid-voltage branches and micro-metering in power transformers, to better track and monitor power flows and bottlenecks, and energy balance and commercial losses in the distribution grids.

18. Component 2: Technical assistance to the EDEs on customer relationship management and commercial culture diffusion. (Indicative cost: US\$ 3.6 million). This component will support design improvement and implementation of the commercial action plans elaborated by the EDEs and CDEEE.

19. Component 3: Social management. (Indicative cost: US\$ 4.56 million). This component will finance the design, implementation and impact evaluation of Social Management Plans (SMPs) whose objectives would be to contribute to: (i) re-establish transparency and trust between the EDEs and their customers; (ii) improve the bills recovery and response time to customers; (iii) conduct proactive communication campaigns on the impact of electricity theft and non-payment of bills; and (iv) raise awareness of targeted customers on the benefits of energy efficiency and basic actions regarding the use of electricity. For each of the areas of distribution circuits to be rehabilitated under the project, social teams within the EDEs designated staff will use participative methodology to conduct socioeconomic diagnosis and a deep analysis of the quality of electricity service and its impact on electricity theft. Technical assistance will be provided to the EDEs to strengthen the capacity of their staff. The component will also finance independent impact evaluation of the SMPs once implemented.

20. Component 4: Technical Assistance, Coordination, monitoring and evaluation of the Distribution Networks Modernization and Loss Reduction Program. (Indicative cost: US\$ 8.24million). This component will finance consulting services to: (i) assist CDEEE to design and execute a Loss Reduction and Commercial Recovery program, aiming at a yearly reduction of 4 percent of distribution losses over five years; (ii) assist the EDEs in the supervision and operational reception of the infrastructure investments under the project; (iii) monitor the evolution of the technical and commercial indicators for the circuits rehabilitated under the project; (iv) monitor the effective and perceived quality of service for the circuits rehabilitated under the project as well as for the entire program; and (v) strengthen the capacity of the project implementation entity; (iv) Support the institutional strengthening of CDEEE and the EDEs through the purchase of IT systems (hardware and software). This will facilitate the processing and handling of information for the commercial, billing and collection management systems in each of the EDEs.

21. The total cost for the four components is estimated at about US\$120 million to be financed by the World Bank as a SIL (terms to be determined).

#### IV. Safeguard Policies that might apply

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

Projects in Disputed Areas OP/BP 7.60		<b>x</b>	
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## V. Financing (in USD Million)

Total Project Cost:	232.00	Total Bank Financing:	120.00
Financing Gap:	12.00		
<b>Financing Source</b>			<b>Amount</b>
Borrower			0.00
International Bank for Reconstruction and Development			120.00
EC European Investment Bank			100.00
Total			220.00

## VI. Contact point

### World Bank

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### Borrower/Client/Recipient

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### Implementing Agencies

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