PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE

Report No.: PIDA584

Project Name	Sierra Leone Energy Access Project - Sierra Leone Infrastructure Development Fund (P126180)
Region	AFRICA
Country	Sierra Leone
Sector(s)	General energy sector (100%)
Lending Instrument	Specific Investment Loan
Project ID	P126180
Borrower(s)	
Implementing Agency	Project Management Unit, Ministry of Energy and Water Resources
Environmental Category	B-Partial Assessment
Date PID Prepared	25-Sep-2012
Estimated Date of Appraisal Completion	01-Oct-2012
Estimated Date of Board Approval	13-Dec-2012
Decision	

I. Project Context

Country Context

Despite a decade of peace since the end of the civil war, living conditions in Sierra Leone remain poor. As of today, the country has an estimated GDP per capita of US$325, the fourth lowest in Sub-Saharan Africa. The latest poverty headcount estimates suggest that 67 percent of the population lives below the poverty line. In the near future, Sierra Leone will have to grapple with some big changes in the country context, which have transformative potential. Post-conflict recovery has been sustained, characterized by economic growth, infrastructure development, improvements in governance and public sector capacity building, and better delivery of basic services. In 2011, real GDP increased by 6 percent. Growth has been broad-based, led by agriculture, services and industry. The start-up of two large scale iron-ore projects and a recovery in other mining sub-sectors have driven growth in the industrial sector. Promoting sustainable and equitable investment-led growth will require Sierra Leone to build stronger institutions and accountability to ensure robust revenues management and maintain macroeconomic stability in the face of volatile foreign currency flows. To this extent, developing human capital and enhancing transparency in the public sector will constitute critical steps.

II. Sectoral and Institutional Context

During the period of civil unrest, Sierra Leone's physical infrastructure, particularly electricity, water, and sanitation, suffered widespread destruction and lack of maintenance. Sierra Leone's limited and depilated power infrastructure base is a major constrain to expand electricity access in the country, which remains below 6 percent. Sparse coverage and unreliable service particularly exacerbates poverty conditions. Public electricity services are limited to selected areas. The urban distribution network operated by the National Power Authority (NPA) extends to Freetown and the surrounding Western area (Freetown Capital Western area), covering less than 40 percent of the residents. The only provincial distribution network currently in operation is the isolated Bo-Kenema system in the south-east of the country. In rural areas, where the bulk of the population resides, electricity access is practically non-existent. In the meantime, electricity tariffs remain among the highest in Africa. In order to meet energy needs, a large majority of Sierra Leone's population is forced to rely on inefficient and polluting traditional fuels, resulting in adverse impact on personal health and safety as well as on the environment.

Inadequate energy supply is a major binding constrain to the likely economic transformation led by the mining sector and requires urgent attention. The commissioning of the 50MW Bumbuna hydroelectric power plant (Bumbuna) in late 2009 has almost doubled Sierra Leone's installed power generation capacity and changed its power-generation mix. Today, overall generation capacity is approximately 82.5 MW. Nevertheless, current capacity remains highly inadequate to accommodate the country's overall power demand. Hydropower from Bumbuna is seasonal, producing less than 20 MW during the dry season. High costs of imported fuel for the thermal power plants and transmission and distribution bottlenecks further reduce available capacity. As a result, existing supply can meet approximately half the demand in Freetown, let alone in the rest of the country. Fast growth in the mining sector is associated to an exponential increase in energy demand, which calls for a major scale-up in generation capacity expansion but also for diversified approaches that allow exploiting synergies in electricity supply and facilitate sharing of benefits between the public and private sector.

Transmission and distribution bottlenecks pose major impediments to expanding electricity supply. The national transmission system consists of only one radial 161 kilovolts (kV) transmission line extending for 205 km from the substation at Bumbuna to the Freetown substation and connected to NPA's distribution network. Both transmission and distribution capacity is severely constrained due to high losses, which reach over 38 percent. While an exact breakdown of technical and non-technical losses is not possible, technical losses in the distribution system alone are likely to be in the 20-25 percent range. Overall, it is estimated that the network can evacuate no more than 35 MW of power, less than half of total installed capacity. The low voltage levels in certain areas as well as the high level of fault occurrence contribute to poor quality of supply. At present, black outs and load shedding are common place.

NPA's endemic structural and operational issues stand at the heart of Sierra Leone's power sector challenges. Lack of adequate technical, operational and financial management capacity impedes the national utility to effectively improve its performance. An inaccurate customer data base, inadequate metering, billing and revenue collection systems and poor accounting have led to low levels of commercial efficiency and

challenges in managing utility operations. NPA's financial stability remains at risk and is heavily dependent on Government support.

A credible loss reduction program can help address some of the major power sector challenges. Reducing technical losses is a critical step to expand the evacuation capacity of the transmission and distribution network. In the short term, the best prospects for reducing technical losses are on the 161kV line from Bumbuna and the primary distribution network in Freetown. Non-technical losses can be brought to an acceptable level in the next 18-24 months. Over the past year, NPA has taken some preliminary steps to reduce technical and non-technical losses through investments in network upgrading and a re-metering program implemented with donor support. The re-metering program can only partially address the issue of non-technical losses; however, it has proved to be an effective tool to raise collection rates and immediately relieve NPA's fragile financial situation. Roughly 37 percent of NPA's customers now have pre-paid meters and cash collection has been outsourced to local commercial banks. As result, in 2011 the collection rate has significantly increased from 67 to 76 percent.

Energy sector institutional and regulatory frameworks are at the incipient stage of development. Oversight of the sector falls under the Ministry of Energy and Water Resources (MoEWR). NPA is the single, vertically integrated national utility and there is no regulatory authority. Both the MoEWR and NPA are understaffed and lack the skills and resources needed to efficiently run the sector. A long-term sector development plan is missing; investments are planned on an ad-hoc basis and management of the sector is mostly geared towards emergency response. A broad reform process was recently initiated and is due to culminate in unbundling of the sector, which envisages separation of responsibilities for operating and maintaining existing government-owned generation and transmission assets from NPA into a new company (Electricity Generation and Transmission Company). Reforms are intended to lay the foundations for better governance and regulation of the power sector, as well as for increased private sector participation and investment. However, the reform process remains at the inception stage and the skills and resources needed outstrip GoSL's current institutional, technical and funding capacity. Also, a full assessment of the power market and adequate sector policies are required before proceeding to develop the needed regulatory frameworks.

The proposed Project responds to the most impending priorities of Sierra Leone's power sector: increase the transfer capacity of the transmission and distribution system; turnaround NPA's operational and commercial performance; and support the scale-up of electricity access in rural areas. Removing critical distribution capacity bottlenecks along NPA's primary distribution network is the most urgent and practical step to enable expanded, stable and more reliable electricity supply. The Project will finance rehabilitation of critical components of Freetown's primary distribution network, increasing its transfer capacity by approximately 8MW and contributing to significantly raise system stability, reliability and quality of supply. Extensive technical assistance will be deployed to address NPA's structural operational and commercial weaknesses, which will contribute to prepare the ground for long-term sector development. The Project will also focuses on reducing non-technical losses and improving collection rates as urgent measures to improve NPA's financial bottom line. Part of investments will complement the re-metering program currently under implementation by NPA. In parallel, technical assistance will be provided in support to the implementation of a systematic loss reduction program. In rural areas, the pilot installation of photovoltaic (PV) systems in selected rural villages will improve the living conditions of the populations targeted under the Project, while supporting the GoSL's long-term program to scale up rural access to electricity using solar energy.

III. Project Development Objectives

The Project Development Objective are to: : (i) reduce losses in electricity supply in Freetown Capital Western Area; (ii) improve commercial performance of the National Power Authority; and (iii) increase access to electricity in selected rural areas.

IV. Project Description

Component Name

Component I: Rehabilitation of Primary Distribution Network, Loss Reduction and Improvement of NPA's Operational and Commercial Performance.

Component II: Rural Electrification

Component III: Project Implementation Management

V. Financing *(in USD Million)*

For Loans/Credits/Others	Amount
Borrower	0.00
Sierra Leone Infrastructure Trust Fund	16.00
Total	16.00

VI. Implementation

The Project will be implemented by the Project Management Unit (PMU) already established at the MoEWR for implementing externally funded development programs. The PMU will closely coordinate with the two project agencies, NPA and the MoEWR.

A Project Oversight Committee comprising of the NPA General Manager and the MoEWR Permanent Secretary will provide guidance on policy and strategic issues, address high level implementation issues and meet every quarter or more often as required to discuss project progress.

The PMU will be led by the current PMU Director appointed by the MoEWR, who will ensure general oversight of the Project and effective coordination between the PMU and the project agencies. The PMU Director will delegate day-to-day oversight to a General Project Coordinator, who will be competitively hired under component III of the Project (Project Implementation Management). The General Project Coordinator will have the following responsibilities: (a) supervise project implementation; (b) supervise procurement and monitor costs and financing; (c) facilitate coordination among project agencies as well as among all relevant institutions and development partners; (d) serve as a single-point for tracking progress of implementation and Project's outcomes; and (e) provide reports and information to the GoSL and financiers.

The PMU will be reinforced with external experts also financed under component III, who will cover the key functions required for project implementation. An external Supervising Engineer for Improvement of Electricity Supply in Urban Areas will be hired to oversee component I of

the Project and carry out management and supervision, and reporting tasks related to the investments in distribution network upgrade, pre-payment meters, statistical metering and BIS. A Project Coordinator for Rural Electrification will be hired to oversee component II and carry out project management and supervision and reporting related to the investments for the installation of photovoltaic systems in the selected rural villages. In addition, the following external experts will be hired under the component III of Project: (a) a Procurement Specialist and a Procurement Assistant; (b) a Financial Management (FM) Specialist and a FM Assistant; (c) an Environmental and Social Development Specialist; and (d) a Public Relations/Communications Specialist.

VII. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
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		X

VIII. Contact point

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