

**PROJECT INFORMATION DOCUMENT (PID)
CONCEPT STAGE**

Report No.: PIDC418

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)	Ministry of Finance and Economic Development
Implementing Agency	Ministry of Energy and Water Resources, National Power Authority (NPA)
Environmental Category	B-Partial Assessment
Date PID Prepared	11-May-2012
Estimated Date of Appraisal Completion	19-Jun-2012
Estimated Date of Board Approval	13-Dec-2012
Concept Review Decision	

I. Introduction and Context

Country Context

Sierra Leone is one of the world's poorest countries. Its GDP per capita estimated at USD 325 ranks as the fourth lowest in Sub-Saharan Africa. Over 70 percent of its population lives on less than \$1.00 per day. The country has a territory of 72,000 km, slightly smaller than the U.S. State of South Carolina. This is home to a population of approximately 6 million, a large segment of which is concentrated in the Freetown area, with one of the region's largest and poorest urban settlements. The very young population (43 percent between the ages of 0-14), also poses a huge challenge to the already high unemployment rate.

The country is continuing its recovery from a devastating decade-long civil war. The economy has been rebounding since the global economic downturn. In 2010 and 2011, GDP expanded at 5 percent, driven by sustained growth in the manufacturing, mining, construction, and agriculture sectors. Sierra Leone has also made considerable progress in infrastructure development, governance and public sector capacity building, and better delivery of basic services, leveraging on support from the international donor community. With a CPIA* score of 3.3, the country has moved beyond the threshold of fragile state. Furthermore, it was recently ranked among the top ten global reformers in key areas of improving business climate.

Infrastructure development presents extraordinary challenges for the people and the Government of Sierra Leone (GoSL). Despite recent progress, Sierra Leone's physical infrastructure remains mostly inadequate to serve the needs of its citizens and support economic and social growth. The sparse coverage and unreliable infrastructure services, particularly electricity, has been a major impediment to poverty reduction in the country. In particular, lack of access to energy is seriously constraining employment and economic opportunities.

*Country Policy and Institutional Assessment, World Bank, 2010.

Sectoral and Institutional Context

A broad reform process of the power sector has been initiated since 2009. Reform efforts are due to culminate in unbundling of the sector, as established by the National Electricity Law approved by the Parliament in November 2011. This envisages separating responsibility of operating and maintaining existing government-owned generation and transmission assets from the National Power Authority (NPA) into a new company (Electricity Generation and Transmission Company). The GoSL further expects to encourage development of privately-financed independent power projects that sell their output to NPA under standardized power purchase arrangements approved by the new regulator.

Sierra Leone has significantly expanded its generation capacity with the commissioning of the 50MW Bumbuna Hydroelectric Power Plant (Bumbuna) in late 2009, although not sufficiently to meeting power demand. Today, overall installed generation capacity is approximately 82.5 MW, including two thermal power plants at Kingtom and Blackhall Road, which together with Bumbuna serve Freetown and the surrounding Western area (Freetown Capital Western area), and 6MW serving the isolated Bo-Kenema system in the south-east of the country. Nevertheless, the available capacity is much lower than what is installed, due to seasonal changes in the flow of water at Bumbuna, the high cost of imported fuel for the thermal power plants and most notably because of transmission and distribution bottlenecks. As a result, existing supply can meet approximately half the suppressed demand for Freetown, let alone the rest of the country.

Sierra Leone's transmission and distribution systems are in the incipient stage and not able to keep up with increase in generation

capacity. The national transmission system consists of only one radial 205 km 161 kilovolts (kV) transmission line extending from the substation at Bumbuna to the Freetown substation and connected to NPA's distribution network. Distribution capacity is also severely constrained. NPA's distribution network suffers from high technical and non-technical losses caused by lack of maintenance, overloading and inadequate metering, billing and revenue collection. Approximately half of the power that is channeled through the network is lost. At present, black outs and load shedding are common place. Besides NPA's grid serving Freetown Capital Western area, the only provincial distribution network currently in operation is the isolated Bo-Kenema system. If transmission and distribution bottlenecks are not addressed, suppressed electricity demand is set to increase in line with continued economic growth.

Overall access in the country is below 6 percent. Even in the Freetown Capital Western area, less than 40 percent of the population is connected to NPA's grid. In rural areas, where the bulk of the population resides, electricity access is practically non-existent. In order to meet energy needs a large majority of Sierra Leone's population is forced to rely on inefficient and polluting traditional fuels such as kerosene for lighting and fuel-wood and charcoal for cooking, resulting in adverse impact on personal health and safety as well as on the environment.

NPA's endemic structural and operational issues stand at the heart of these challenges. 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. Over the past year, NPA has taken some preliminary steps to improve its performance. Network upgrading and a re-metering program for replacing post-paid (credit) meters with efficient pre-paid meters are being carried out with donor support. In addition, cash collection has been outsourced to the local commercial banks. As a result, the average collection rate has increased from 68 percent to 76 percent. Roughly 37 percent of NPA's customers now have pre-paid meters. Nevertheless, NPA's financial stability remains at risk, with large outstanding liabilities and operational expenses exceeding receipts both in 2010 and 2011.

The Bank's Support to Sierra Leone's Power Sector has so far included the power component of the Power and Water project that closed on March 31, 2011, and the Bumbuna Hydroelectric Environmental and Social Management project (Bumbuna project), which has been trying to mainstream sustainable hydropower operations. In an effort to harmonize and pool donor support dedicated to infrastructure development, in 2010 the World Bank established the Sierra Leone Infrastructure Development Fund (SLIDF) with the U.K.'s Department of International Development (DFID) being the anchor donor of the SLIDF. The main objective of the SLIDF is to support the Republic of Sierra Leone's Poverty Reduction Strategy (PSR) by: (i) facilitating expanded access to basic services; (ii) raising the efficiency and effectiveness of infrastructure development by improving sector governance and accountability; and (iii) building government capacity to plan and manage development projects. The first stage supports implementation of two key studies, including a power tariff study providing specific recommendations for retail and wholesale tariff methodologies, and an integrated resource planning (IRP) study to guide the GoSL's future sector activities. Activities for the second stage constitute Phase I of the proposed Project as defined below.

Relationship to CAS

The Proposed Project will contribute to achieving GoSL's priorities in the power sector by supporting (i) improvements in management and regulation of the power sector through capacity building and knowledge transfer; and (ii) improvement of power supply in urban areas through the upgrading of the national distribution system and electricity access in rural areas through the development of new power sources for rural electrification. The Project is consistent with the Second Poverty Reduction Strategy Paper for Sierra Leone (PRSP II) – An Agenda for Change – covering the period 2008-2012, and the new Poverty Reduction Strategy – Agenda for Prosperity – for the period 2013-2017 that is currently under preparation, both identifying the enhancement of power supply as one of the critical priorities of the Government's national development program.

The Proposed Project is also consistent with the Joint Country Assistance Strategy (JAS) for Sierra Leone covering the period 2010-2013, whose pillar of Inclusive Growth focuses on energy, along with transport, agriculture, fisheries and financial sector.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

14. The Project Development Objective is to (i) help improve electricity supply in urban areas and access to electricity in selected rural areas; and (ii) enhance GoSL capacity for implementing power sector reforms.

Key Results (From PCN)

15. Key results from the Project are expected to include:

- (a) Improved capacity of the distribution network;
- (b) Reduced system losses;
- (c) Improved collection of payments for electricity consumption;
- (d) Pilot projects for improving rural electricity access developed in selected villages; and
- (e) Improved capacity of GoSL to implement power sector reforms.

III. Preliminary Description

Concept Description

The Project consists of three components: (i) Distribution Network Upgrade and Improvement of Utility Operations; (ii) Expansion of Rural Access to Electricity; and (iii) Institutional Capacity Building for Implementation of Power Sector Reforms and Project Management.

Component 1: Distribution Network Upgrade and Improvement of Utility Operations. This includes: (i) rehabilitation of primary distribution network and limited rehabilitation of secondary network and reticulation lines; and (ii) installation of infrastructure and tools for improving NPA's commercial performance.

Component 2: Institutional Capacity Building for Implementation of Power Sector Reforms and Project Management. This has two main sub-components. The first component is intended to facilitate the actual implementation of sector reforms by supporting: (i) establishment of regulation institutions and frameworks; (ii) design of the organizational structure of the new institutions resulting from unbundling of the sector; and (iii) design and implementation of a Public Awareness Strategy. The second sub-component will provide support and capacity building for strengthening the Project Management Units at NPA and Ministry of Energy and Water Resources (MoEWR) and ensure adequate project preparation, management and supervision.

Component 3: Expansion of Rural Access to Electricity. Under this component, technical assistance will be deployed to support the establishment of institutions, policies and regulation frameworks for rural electrification, including a Rural Electrification Agency. Investment support will be provided to a pilot program for the installation of photovoltaic systems in public buildings including schools and clinics in 14 rural villages around the country to demonstrate applicability of the solar technology for larger deployment.

The Project will be funded by SLDF and IDA, for which the lending instrument would be a Specific Investment Loan (SIL). In order to allow implementation to be flexibly adjusted to the availability of funding from the two sources, the Project will be implemented in two phases. Phase I will be funded by the SLIDF for a total of USD19.2 million; Phase II will be funded by IDA for a total of USD22 million. The two phases will run in parallel, subject to the availability of the SLIDF funding. In particular, activities under component 1. (Distribution Network Upgrade and Improvement of Utility Operations) and component 2. (Institutional Capacity Building for Implementation of Power Sector Reforms and Project Management) will be split between the two Phases. Component 3. (Expansion of Rural Access to Electricity) will be undertaken under Phase I.

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		X	

V. Tentative financing

Financing Source	Amount
Borrower	0.00
Sierra Leone Infrastructure Trust Fund	19.20
Total	19.20

VI. Contact point

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