PROJECT INFORMATION DOCUMENT (PID)
CONCEPT STAGE

Report No.: PIDC485

Project Name	Electricity Modernization Project (P120014)
Region	AFRICA
Country	Kenya
Sector(s)	Transmission and Distribution of Electricity (50%), Other Renewable Energy (50%)
Theme(s)	Infrastructure services for private sector development (100%)
Lending Instrument	Specific Investment Loan
Project ID	P120014
Borrower(s)	Ministry of Finance
Implementing Agency	Ministry of Energy
Environmental Category	B-Partial Assessment
Date PID Prepared/ Updated	13-Jun-2013
Date PID Approved/ Disclosed	27-Jun-2013
Estimated Date of Appraisal Completion	07-Feb-2014
Estimated Date of Board Approval	27-Mar-2014
Concept Review Decision	

I. Introduction and Context

Country Context

1. Kenya has substantial potential for economic growth and can reach middle-income country status by 2019. Kenya's economy is more diversified than most countries in Sub-Saharan Africa. About 55 percent of Kenya's Gross Domestic Product (GDP) comes from services, transport, finance, tourism, information and communications technology (ICT) and trade – sectors that critically depend upon reliable power supply. GDP growth in 2012 is estimated at 4.3 percent. 5 percent growth is predicted by the World Bank in 2013 if sound macroeconomic policies persist (decline in inflation and interest rates) and if a smooth transfer of power follows peaceful elections in March 2013. With relatively low levels of debt, a stable exchange rate, and declining inflation, Kenya is able to run higher fiscal deficits to maintain its public investment program, especially in infrastructure.

2. Kenya is experiencing rapid population growth, but its dynamic private sector faces serious

infrastructure constraints. Electricity supply and transport bottlenecks need to be relieved if Kenya is to maximize its potential for private sector-led growth. The population in Kenya doubled over the last 25 years and by 2040, Kenya – with a predicted 75 million people – is expected to become the 21st largest economy in the world. Kenya's vibrant private sector is a major source of economic growth, driven by expanding services in telecommunications and transport. Kenya benefits from its geographical location that is favorable to trade, with the port of Mombasa serving as the most important gateway for imports to the East African Community (EAC) countries, South Sudan and eastern DRC. The EAC is now trading more with itself than with other regions of the world, and Kenya's top trading partners are no longer European countries. Trade offers potential for Kenya to mitigate its external vulnerability and reduce its current account deficit. However, increasing demand is exerting great pressure on existing infrastructure and the Mombasa port is characterized by high dwell times and inefficient operations that result in significant time and cost bottlenecks. If predicted growth rates in the EAC are to be maintained, capacity in the ports, road and rail sectors has to be matched with demand.

Sectoral and Institutional Context

3. An Energy Policy and an Energy Bill were drafted in 2012 that declare the broad principles and intentions of public policy for the electricity sector. The mission statement preamble to the draft Energy Policy encapsulates well the overarching objective of public policy i.e., "to facilitate provision of clean sustainable, affordable, reliable, and secure energy services at least cost while protecting the environment". The draft Energy Policy lists 23 objectives for the energy sector. They can be summarized under four headings:

a. Ensure adequate electricity supply. The Government's policy aims to mobilize timely and adequate public and private financing for geothermal development and generation and transmission infrastructure including infrastructure to interconnect with the power systems of neighboring countries.

b. Promote cost effective and equitable pricing of electricity. The Government's policies aim to secure more stable and predictable electricity prices to underpin the competitiveness of Kenyan firms and to reduce the burden of electricity purchase on household budgets.

c. Rapidly increase the number of Kenya households with electricity service. The Government's objective is to achieve 40 percent population access to electricity by 2020 by grid and off-grid means.

d. Promote efficiency in the supply and use of electricity. Government's policies aim to bring about improvement in the operational performance of KPLC so that it can ensure reliable service to customers.

4. The draft Energy Policy of 2012 builds on a policy framework and institutional structures that are essentially sound and that provide the basis for the sector's sustainability. The policies and institutions that are in place are the result of the reforms implemented since the comprehensive reform review carried out ten years ago that culminated in the Energy Policy of 2004 (Sessional Paper No. 4). The reforms implemented to date notably private participation in generation, commercial and technical performance contracting for the public companies and a tariff policy based on cost recovery and regulation by contract that were accompanied by partial vertical unbundling (separation of generation, transmission and distribution and creation of specialized agencies for geothermal resource development and rural electrification have had positive outcomes. The reforms have spurred donor concessional funding (donor commitments in projects under implementation amount to about US$3.6 billion equivalent), private investment of approximately

US$200 equity and US$830 million debt in five IPPs (347MW) currently in operation and four (286 MW) under construction. Electrification rates have increased sharply (from one million to over two million customers in the past five years) following government mandated annual targets for new connections with Kenya Power and Lighting Corporation (KPLC).

Relationship to CAS

5. The proposed Project will support the Country Partnership Strategy (CPS) objective of removing infrastructure bottlenecks as a key area for unleashing the country's growth potential (Outcome 1.2). The CPS notes that adequate and reliable supply of affordable electricity is a key to economic growth, security, and delivery of social services.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

The proposed project development objectives (PDOs) are: (a) to increase the number of households and businesses with access to electricity; and (b) to improve quality of electricity service in targeted areas.

Key Results (From PCN)

The achievement of development objectives will be assessed using the following key outcome indicators.

Access:

- Number of people provided with access to electricity in the project areas
- Number of formal and informal enterprises provided with access to electricity in the project areas

Efficiency, quality and reliability of supply:

- Average electricity supply interruptions duration and frequency per year in the project areas (System Average Interruption Duration Index - SAIDI and System Average Interruption Frequency Index –SAIFI)

III. Preliminary Description

Concept Description

6. The rationale for the project concept is driven by the imperative to greatly improve reliability of electricity supply to underpin economic activity and to sustain electrification. The project is designed to reduce scheduled and unscheduled interruptions by building resiliency into the network so it has the ability to react to unexpected events by isolating problematic elements while the rest of the system is restored to normal operation and by minimizing the impact of scheduled network maintenance on the fewest number of customers.

7. The proposed Project will favor a zonal approach concentrated in the principal geographical areas of economic activity and opportunity. The smart grid investments under the Project will be concentrated in economic growth poles around the country. By improving the reliability of electricity service in the main economic growth poles, the Project will reduce the cost of doing business thus boosting investment and productivity. The strategy will maximize the impact in a relatively shorter period than if the entire network is targeted. Currently businesses incur heavy production losses and capital investment costs in self-generation due to unreliable electricity

service. By ensuring reliable electricity service in economic growth zones, existing businesses will become more productive and will be encouraged to expand and new manufacturing and service industries will be attracted to set up operations in these zones. Further, lessons learnt from these zones will form the basis for expanding similar KPLC operations outside targeted areas.

8. Investments in transmission and distribution infrastructure will be accompanied by effective enforcement of regulations on service quality to ensure reliable service to consumers. Effective enforcement of a strict regime of service quality, and application of penalties when mandatory standards are not met needs to accompany investment in the distribution network.

9. The purpose of the proposed $50 million partial credit guarantee as part of the financing package is to improve the terms and conditions of KPLC borrowing.

10. Project Components.

Component A- Activities related to introduction of a Smart Grid
- Smart Metering subcomponent.
- Geographical Information System (GIS) and Facilities Data Base (FDB) subcomponent
- Automation Sub-component (SCADA – System Control and Data Acquisition and DNMC – Distribution Network Monitoring & Control)

Component B- Expansion and Strengthening of the Electricity Distribution System
- Upgrading of substations and the associated distribution network sub-component
- Under grounding and re-configuring the Distribution Network in the Central Business Districts of major cities Subcomponent.

Component C- Technical Assistance
- Network Planning
- Operation of a Smart Grid
- Design and Preparation of Regulatory Instruments on Service Quality
- Design and Implementation of Improved Governance Measures
- Feasibility Studies
- Training

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IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
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		x	

V. Financing (in USD Million)

Total Project Cost:	550.00	Total Bank Financing:	200.00
Total Cofinancing:		Financing Gap:	50.00

Financing Source	**Amount**
BORROWER/RECIPIENT	150.00
International Development Association (IDA)	200.00
IDA Guarantee	50.00
FRANCE French Agency for Development	50.00
International Finance Corporation (IFC)	50.00
Total	500.00

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