# PROJECT INFORMATION DOCUMENT (PID)
## CONCEPT STAGE

Report No.: AB4418

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| **Project Name** | Electricity Expansion |
| **Region** | AFRICA |
| **Sector** | Power (65%); Renewable energy (35%) |
| **Project ID** | P103037 |
| **Borrower(s)** | GOVERNMENT OF KENYA (GOK) |
| **Implementing Agency** | Ministry of Energy, Kenya Electricity Generating Company Ltd., Kenya Power and Lighting Company Ltd., Rural Electrification Authority |
| **Environment Category** | [ ] A [ X] B [ ] C [ ] FI [ ] TBD (to be determined) |
| **Date PID Prepared** | September 15, 2009 |
| **Estimated Date of Appraisal Authorization** | January, 2010 |
| **Estimated Date of Board Approval** | April, 2010 |

1. Key development issues and rationale for Bank involvement

### A. Background

Kenya's economy grew strongly between 2003 and 2007 peaking at 6.9 percent in 2007. In 2008, however, growth contracted to 1.7 percent and remained feeble in the first half of 2009. The Africa Infrastructure Country Diagnostic (AICD) found that lack of reliable energy costs Kenya 1.5 percent of GDP growth. In financial terms, the disruption of public power supply costs Kenyan firms approximately 7 percent of their annual sales revenues. In addition, access to electricity (i.e. the percent of households with an electricity connection) is only 17 percent.

Power sector development is a key element of the GoK's national development strategy, *Vision 2030*. To achieve Vision 2030, the GoK has established ambitious targets for electrification scale-up and supply expansion. The electrification rate is set to increase to 40 percent by 2030, with an intermediate target to electrify one million new customers in the next five years (mainly households and small businesses) and to extend electricity service to priority loads (local government headquarters, market/community centers, secondary schools and health clinics). On the supply side, GoK strategy calls for expanding the national generation capacity and increasing energy trade with its neighbors. Further development of geothermal power capacity is a priority. Moreover, the Government has put in place a number of policies that provide incentives for private operators to set up small and medium sized grid and off-grid renewable energy projects. For example, a standardized contract with pre-determined "feed–in" tariffs is available (i.e. tariffs that guarantee the revenue stream of a project to a private operator).

### B. Electricity Sector's Track Record of Reform

Kenya has an impressive track record of electricity sector reform that provides the foundation for the planned large-scale expansion program. Notable reform achievements are: the transformation of the power industry structure; establishing independent economic regulation; and private participation through IPPs and private shareholdings in KenGen and KPLC. More recent industry restructuring actions have been the creation of a transmission company (Ketraco) to facilitate open access to the grid and a Geothermal Development Company (GDC) to spearhead geothermal prospecting and development. Planning and implementation of rural electrification has been transferred from the Ministry of Energy and KPLC to a new Rural Electrification Authority (REA).

The electricity sector's regulatory environment is supportive of the sector's financial sustainability, which underpins the planned expansion program. Since 2008, tariffs have been set at cost recovery levels and in line with international best practice, retail tariffs incorporate a variable component to take account of changes in international oil prices, foreign exchange rates, and inflation.

## C. Electricity Sector Development Program

The GoK has translated its sector development priorities into an investment program, set out in an Electrification Investment Prospectus and a Least-Cost Generation Expansion Plan. The Prospectus calculates the costs of Government's electrification scale-up plan to meet the medium-term targets of Vision 2030 at US$1.8 billion, covering the costs of actual connections and the related investments needed to strengthen/upgrade the underlying transmission and distribution networks, so that the expansion does not undermine the quality of supply. A separate Least-Cost Generation Expansion Plan covers the required investments to meet demand growth and to supply new consumers. The estimated cost of the generation expansion is in excess of an additional US$3 billion.

Given the enormous investment needs in the sector, concessional financing (IDA and other development partners) is essential to complement Government and commercial resources in order to maintain affordability of electricity service. There are no instances of countries that implemented an electrification program similar to the one Kenya is implementing without recourse to concessional funding for a considerable part of the investments needed for network expansion.

## D. Rationale for Bank involvement

Rationale for continued Bank involvement derives from: positive engagement and results achieved during the previous and ongoing projects; prospects for leveraging IDA resources to mobilize additional concessional funding from other development partners in a 1 to 3 ratio; and the importance of electricity sector development in Kenya for realization of regional power trade opportunities that in turn have high economic benefits.

The Bank's continued involvement in the sector will support GoK's electricity sector expansion program and deepening of sector reforms. Policy dialogue, technical assistance and capacity building will complement IDA investment support in the proposed project and IFC, MIGA and other development partner interventions will complement IDA resources. Other complementary support includes Lighting Africa, a joint IFC/WB initiative that supports the private sector to develop affordable, clean and efficient modern lighting solutions for millions of Sub-Saharan Africans who currently live without access to the electricity grid.

The World Bank's FY04-08 Country Assistance Strategy (CAS) for Kenya was completed in June 2008 and a new CAS will be prepared in 2009. The proposed project is consistent with the new CAS in supporting directly all of its three strategic themes, namely: accelerating sustainable economic growth; addressing poverty, inequality and social exclusion; and managing resource scarcity and environmental challenges. In particular, the project aims at unlocking Kenya's growth potential through increasing power supply and improving its reliability and electrifying areas with growth potential (e.g. the fast growing peri-urban areas with a high number of SMEs and the principal rural centers with agri-business potential). The project's rural electrification component launches the expansion into the areas out of the reach of the current grid, promoting equitable geographical distribution of electrification benefits. Project support for geothermal generation will contribute to the "greening" of Kenya's energy future.

2. Proposed objective(s)

The development objectives of the proposed Project are to (a) increase access to electricity in urban, peri-urban and rural areas; and (b) improve the efficiency, reliability and quality of service to consumers, while sustaining the policy, institutional and regulatory environment needed for these results to materialize.

3. Preliminary description

The estimated total project cost is about US$1.5 billion to be shared between development partners (in the form of co-financing and parallel financing) and the Government / implementing entities. IDA contribution will be around US$300 million.

***Component 1: Geothermal generation*** (IDA financing $100M)

The component will finance expansion of geothermal generation in the greater Olkaria geothermal area near the town of Naivasha, where 163MW are already under exploitation. IDA financing will be about 16 percent of the overall cost of this component. The project will finance three 70MW steam turbine plants, steam gathering systems, transmission lines and switchyards in Olkaria I and IV, increasing Kenya's geothermal capacity by 130 percent. The plants will be owned and operated by KenGen.

***Component 2: Transmission*** (IDA financing $70M)

This component will finance the strengthening of Kenya's transmission network through the construction of 132 kV transmission lines and sub-stations in various parts of the country at an estimated cost of US$140 million. KPLC will implement this component on behalf of the owner of the lines, Ketraco, which was created in 2008, and is not operational yet.

***Component 3: Distribution upgrading and infilling*** (IDA financing $75M)

The distribution component will finance upgrading of the distribution networks in the Coast, West Kenya, Nyanza, Mt. Kenya, and Nairobi regions, which have been identified to be in most urgent need of investments due to rapid load growth. The investments will include upgrading of distribution substations, network reinforcement and extension aimed at increasing the network capacity and extending the network to peri-urban and rural areas.

IDA contribution would be about US$75 million (about 18 percent of total planned project expenditure for this component). The implementing entity for this component is KPLC.

***Component 4: Rural electrification*** (IDA financing $35M)

The rural electrification component will finance expansion to geographic areas, which currently do not have grid access, focusing primarily on rural towns and market centers with agriculture/productive potential, public institutions and social/community applications, such as schools and clinics. The project will support the implementation of the recently completed Rural Electrification Master Plan (REMP) by integrating the first set of its priority investments, at estimated costs of US$400 million. The component will be implemented by REA, in close coordination with KPLC.

***Component 5: Technical assistance for sector development and contingencies*** (IDA $20M)

This component will have two parts: sector policy and operational support for the sector entities KPLC, KenGen, ERC, REA, GDC and Ketraco; and project implementation support.

4. Safeguard policies that might apply

It is anticipated that OP 4.01, OP 4.04 and OP 4.12 will be triggered due to the potential adverse environmental and social impacts of the planned investments in geothermal generation and the construction of transmission lines, as well as distribution lines in peri-urban and rural areas. OP 4.10 and OP 4.11 may be triggered. The implementing entities will prepare the requisite Environmental and Social Assessment Reports and Resettlement Action Plans for components 1 and 2, and an Environmental and Social Management Framework and a Resettlement Policy Framework for components 3 and 4. These documents will be disclosed in Kenya and at the Bank's Infoshop in Washington DC prior to appraisal of the project.

5. Tentative financing

| Source: | | ($m.) |
|---|---|---|
| BORROWER/RECIPIENT | | 350 |
| International Development Association (IDA) | | 300 |
| Others (EIB, AFD, JICA, KfW etc) | | 870 |
| | Total | 1,530 |

6. Contact point

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