

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

Report No.: PIDA314

Project Name	Regional Eastern Africa Power Pool Program (APL1) (P126579)
Region	AFRICA
Country	Africa
Sector(s)	General energy sector (100%)
Lending Instrument	Adaptable Program Loan
Project ID	P126579
Borrower(s)	GOVERNMENT OF ETHIOPIA, Government of Kenya
Implementing Agency	Ethiopia Electric Power Corporation, Kenya Electricity Transmission Company Ltd.
Environmental Category	A-Full Assessment
Date PID Prepared	29-Apr-2012
Estimated Date of Appraisal Completion	10-Apr-2012
Estimated Date of Board Approval	21-Jun-2012
Decision	

I. Project Context

Country Context

Regional integration is critical for East Africa's economic transformation. The East Africa region - defined as the group of countries that comprises the East African Community (Kenya, Tanzania, Uganda, Rwanda and Burundi) as well as Ethiopia and Sudan - has a combined GDP of approximately \$170 billion, equal to 15 percent of Sub-Saharan Africa's (SSA) wealth. The region has sustained economic growth in the last decade despite the global financial crisis. However, unlike some of the other regions of Africa, East Africa comprises a number of small economies, many of which are physically cut-off from key resources. The small size of these economies prevents the capture of scale economies, making it difficult for governments to afford the high fixed costs associated with infrastructure development, including transport and power infrastructure. Integration of power transmission infrastructure would enable these emerging economies to share energy resources and strengthen the region's linkages with global markets to exploit greater economic opportunities.

Despite its abundant energy resources, East Africa faces a large power deficit, which undermines economic growth, thus diminishing job creation prospects and poverty reduction efforts in the region. Ethiopia and the Democratic Republic of the Congo (DRC) alone account for over 60 percent of SSA's hydropower potential. Kenya has substantial geothermal resources and wind energy while Tanzania has considerable natural gas potential. Yet despite energy resource abundance, the countries of East Africa have the lowest rates of household electricity access and per capita electricity consumption in Africa. Due to the small size of most of their power systems, the cost of producing power in East Africa countries can reach US\$0.20 per kilowatt-hour, which greatly increases the cost of doing business thus reducing competitiveness of firms. Inadequate and unreliable power supply is an additional cost that also constrains growth in the industrial and other productive sectors, including SMEs, reducing their ability to generate employment.

Regional power trade is the most efficient means to expand household electricity access in East Africa and is a key enabler of economic growth and climate resilience in the region as a whole. Regional power trade will facilitate large-scale development of the region's cost-effective and clean energy sources – hydropower, geothermal power, wind and natural gas –, allowing all the countries of East Africa to benefit from these resources and share the costs. Estimates indicate that power trade at full potential can displace 20,000 megawatts of thermal generation capacity and save the East Africa region US\$1 billion in annual costs of power system operation and development. Also, electricity trade can boost East African countries' resilience to climate change. Imports ensure more secure and reliable power supply to countries that are vulnerable to climate-related risks. Regional power trade, by facilitating a larger share of renewable energy in the power supply of the region as a whole can reduce carbon emissions by 20 million tons per year, equal to 8 percent of Sub-Saharan African anticipated emissions through 2015.

The creation of the Eastern Africa Power Pool (EAPP) responds to East African countries' objective to achieve regional power system integration. The countries of East Africa have mandated the EAPP to coordinate investment in power generation and transmission projects for integration of the region's power systems. With funding from the AfDB and the European Commission, the EAPP Secretariat has prepared the first Regional Power System Master Plan (EAPP Master Plan) for the East African region, which was endorsed by the Governments of the EAPP member countries in 2011. The Plan identifies the least-cost generation and transmission projects to ensure electricity supply to the region under common long-term sufficiency and reliability requirements. According to the EAPP Master Plan, the investments in cross-border transmission needed over a 30-year period to transform the EAPP into a fully operational pool total US\$3.7 billion.

The proposed Regional Eastern Africa Power Pool Program will contribute to the development of the regional transmission network that is a prerequisite for regional power integration. The Program has been designed within the framework of the Eastern Africa Power Pool and is articulated in three phases to interconnect the power grids of Ethiopia, Kenya and Tanzania, Uganda and Rwanda. The EAPP Master Plan has identified these interconnections as priorities for the development of the East African power market. As result, the Program will integrate the power systems of five countries with a current total population of 212 million and a GDP of US\$107 billion.

The first phase of the Program will develop the Ethiopia-Kenya interconnection. It is a system-to-system interconnection, initially linking the national grids of Ethiopia and Kenya and thus laying the basis for the broader regional transmission backbone. In the medium to long-term, the

line will serve a larger number of East African countries that will interconnect to the EAPP network. As such, it constitutes a corridor of strategic importance connecting the southern and northern parts of the region. Initially, power will flow from north to south (from Ethiopia to Kenya) but in a scenario of full integration and optimal generation expansion at the regional level, power will flow from south to north to reach centers of high demand in the north such as Egypt. Power traded on the line will be initially sourced from Ethiopia and then from a large number of generation sources in the region as more countries interconnect to the power pool. The power exported by Ethiopia may originate in a large number of existing and planned generating plants in Ethiopia.

II. Sectoral and Institutional Context

The EAPP was created in February 2005 through an Inter-Governmental Memorandum of Understanding (MoU) signed by the Ministers of Energy of Burundi, DRC, Egypt, Ethiopia, Kenya, Rwanda, and Sudan. In 2005, an Inter-Utility MoU was signed by the utilities of the various member countries. The EAPP was adopted by the Common Market for Eastern and Southern Africa (COMESA) as a specialized agency in 2006. Tanzania joined in 2010 and Libya in 2011. Uganda is planning to join in 2012. The EAPP is expected to operate in the framework of the New Partnership for the Development of Africa (NEPAD) and to complement the inter-governmental Nile Basin Initiative (NBI), which promotes equitable and sustainable management and development of the shared water resources of the Nile Basin. The EAPP is in the preliminary stage of developing a future, integrated power market. In the medium term, the power pool will rely on bilateral contracts for power trading among the various countries in the region. However, development partners have been assisting in the development of EAPP as an institution able to facilitate further regional power integration. USAID is helping EAPP develop sample agreements for electricity trade. In addition, the Government of Norway is funding the development of a Coordination Center and Regional Regulatory Body.

III. Project Development Objectives

Project objectives are to: (a) increase the volume and reduce the cost of electricity supply in Kenya; and (b) provide revenues to Ethiopia through the export of electricity from Ethiopia to Kenya.

IV. Project Description

Component Name

Component A: Construction of a High Voltage Direct Current (HVDC) transmission interconnection between Ethiopia and Kenya

Component B: Project Management and Capacity Building

V. Financing (in USD Million)

For Loans/Credits/Others	Amount
BORROWER/RECIPIENT	121.10
International Development Association (IDA)	684.00
African Development Bank	354.30
FRANCE Govt. of [MOFA and AFD (C2D)]	118.00
Total	1277.40

VI. Implementation

The Project will be implemented by the Ethiopian Electric Power Corporation (EPPCO) and the Kenya Electricity Transmission Company Ltd. (KETRACO). The Project will have three external co-financiers: IDA, the African Development Bank (under its ADF-window) and the French Development Agency (AFD).

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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