PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE

Report No.: PIDA27069

Project Name	Rwanda Electricity Sector Strengthening Project (P150634)
Region	AFRICA
Country	Rwanda
Sector(s)	Public administration- Energy and mining (25%), Transmission and Distribution of Electricity (65%), General energy sector (10%)
Theme(s)	Other public sector governance (25%), Other urban development (10%), Infrastructure services for private sector development (55%), R ural services and infrastructure (10%)
Lending Instrument	Investment Project Financing
Project ID	P150634
Borrower(s)	The Republic of Rwanda
Implementing Agency	Energy Utility Corporation Limited
Environmental Category	B-Partial Assessment
Date PID Prepared/Updated	24-Sep-2015
Date PID Approved/Disclosed	13-Oct-2015
Estimated Date of Appraisal Completion	30-Sep-2015
Estimated Date of Board Approval	11-Dec-2015
Appraisal Review Decision (from Decision Note)	Appraisal of the above-referenced Rwanda Electricity Sector Strengthening Project that was discussed by the Regular Decision Meeting on August 20, 2015. The Decision Meeting authorized to upgrade the project pre-appraisal undertaken in June 2015 mission to appraisal once the appraisal stage ISDS and safeguards documents have been disclosed.

I. Project Context

Country Context

1. Rwanda is a landlocked country in the Great Lakes region of Africa, bordered by the Democratic Republic of the Congo, Burundi, Tanzania, and Uganda. Rwanda has made impressive development progress since the genocide and civil war that engulfed the country in the early 1990s. It is now consolidating gains in social development and accelerating growth while ensuring that these are broadly shared to mitigate risks to eroding the country's hard-won political and social stability. The results are noteworthy. From 2006 to 2011, Rwanda's poverty level dropped from 57 percent to 45 percent. Rwanda's 2013 human development index is above the average for countries in Sub-Saharan Africa. Rwanda has also been the leading reformer among African economies in Doing Business indicators, ranking 32 in the world in 2014. Annual GDP growth has averaged 6

percent over the period 2000-2014, and projections indicate GDP growth up to 8 percent in the coming years.

2. Rwanda's strategy for stimulating rapid and sustainable economic growth and reducing poverty is articulated in Rwanda's Vision 2020.Vision 2020, the national vision and policy framework, articulates key priorities for the country's development by the year 2020. This vision is further laid out in the Second Economic Development and Poverty Reduction Strategy Paper (EDPRS 2), which delineates electricity as a key sector and a significant engine of inclusive growth for the country. The country's EDPRS2, aims to accelerate progress to middle income country status through a sustained annual GDP growth of at least 11.5 percent and accelerated reduction of poverty to less than 30 percent of the population by 2018. This is would be achieved by the private sector serving as the engine of growth and job creation over the medium term (2013-2018) in addition to increased off-farm employment. In addition, the aid shortfall during the period 2012/13 and slowdown of foreign direct investment in 2012 as a result of global financial crisis revealed the urgency to shift from an aid-dependent, public sector-led development process to a private sector-led growth trajectory to meet the EDPRS2 goals.

3. Electricity remains one of the major challenges to the country's socio-economic transformation. Ensuring access to modern, sustainable, and affordable energy services is integral to Rwanda's economic development, poverty eradication and socioeconomic transformation agenda. Access, reliability, and cost of electricity are primary constraints to scaling-up investment flows, as articulated in Rwanda's Investment Climate report (Private Sector Development Policy Note, 2014). Firms lose out on competitive advantage due to the high price of electricity which, at US $0.22/kWh, is much higher than in neighboring countries (Kenya at US$0.16, Uganda at US$0.17, and Tanzania at US$0.13). Industries present electricity as a binding constraint, an important consideration as they are the ones most likely to drive job creation, exports, and growth. According to the Enterprise Survey (World Bank, 2011), power outages contribute to 2.6 percent of annual losses for companies. Finally, while access has risen from 6 percent in 2008 to 22 percent by end 2014, a large majority of the population remains without access to electricity, particularly in rural areas.

4. Electricity features as key in two of the four thematic areas identified to achieve EDPRS2 goals: Economic Transformation for Rapid Growth, and Rural Development. In the former, the outcome is to ensure sufficient generation to meet all of Rwanda's energy demand by increasing generation capacity to 563 MW (the generation target for 2018), which entails strengthening the enabling environment so as to attract robust private sector interest in generation projects. For the latter, the outcome is to increase access to electricity to new growth centers and the rural population through both grid and off-grid means. While grid electrification is underpinned by the ongoing national Electricity Access Rollout Program (EARP), the Government of Rwanda (GoR) also anticipates substantial scale-up of off-grid modes, particularly solar products delivered by the private sector.

5. An energy sector policy and sector strategic plan to complement the country's economic aspirations were approved in March 2015. This mandate is translated into three specific goals for the energy sector:

i. Ensuring the availability and affordability of energy supply for all Rwandans;
ii. Encouraging the rational and efficient use of energy; and
iii. Establishing environmentally sound and sustainable systems of energy production,

procurement, transportation, distribution and end-use.

6. To achieve these objectives, a scale-up of generation capacity, reduction of system losses, and bolstering of the energy sector financial situation are essential. To this end, the GoR has undertaken a wide-ranging reform program to create a viable and accountable sector that is able to deliver energy services in a commercially sustainable manner. These challenges and the sector and institutional context are presented in the next section.

Sectoral and institutional Context

7. Low Access. In spite of important achievements since 2009, more than three out of four Rwandans, largely located in rural areas, lack access to electricity. The total number of electricity customers has risen substantially since January 2009, from about 6 percent to 22 percent by end 2014. However, the electrification rate remains largely concentrated in the top quintile, with almost negligible coverage in the bottom 40 percent of the population. To address the needs of the vast majority of the population and ensure sustainable poverty reduction and rural livelihoods, one of the priorities of the EDPRS2's rural transformation theme is to connect rural communities to economic opportunity through improved infrastructure, including increased access to electricity services which is widely associated with increased off-farm activity and increased economic interaction, such as agricultural market information and facilitating trading through mobile money transfers through use of mobile phones. The overarching objective is to provide core infrastructure, including increased access to the electricity grid, required to: (i) stimulate investments and economic activities in rural areas; and (ii) contribute to improved public service delivery targeting community-based institutions used by the poor, such as schools, clinics, and hospitals for shared growth and prosperity. To attain this objective, the EDPRS2 target is to increase the national access to the electricity grid to 48 percent by 2018, including 100 percent coverage of all the rural growth centers, secondary cities, and social infrastructure such as health centers, post primary schools, and sector public administrative centers.

8. Limited Investments in Generation Capacity. Rwanda's installed capacity as of end 2014 was about 150 MW, with available capacity of about 130 MW and peak demand of about 110 MW. The GoR plans to expand the country's generation capacity to about 563 MW by 2018, which requires an annual investment of approximately US$167 million. To increase the country's total installed generation capacity, GoR is making efforts to tap into methane, peat, and solar to secure a more balanced energy mix and lower the cost of supply. GoR's policy is to have a private sector-led generation investment program. Albeit Rwanda's high ranking in "Doing Business," increased private sector participation in Rwanda's energy sector has been constrained by lack of adequate staff with experience for effective management of the sector. As a result, the sector policies, planning approach, and development plans have not been robust enough to identify optimal generation projects that are bankable for development by the private sector. Human resource constraints have also limited the sector's capacity in the procurement of private sector investment and implementation of planned projects. As a result, there have been no clear procedures to implement new investments in electricity generation. Thus, the sector has been responding to unsolicited proposals for generation projects, with the developers of such proposals setting the timing for their effective implementation resulting in delays in bringing to financial close various generation investments. One of the major drivers behind the country's ongoing sector reforms is to improve the electricity utility's ability to be a viable off-taker for private generators, with operational autonomy to diligently develop in a systematic and comprehensive manner the technical

studies and field work required to assess the potential/availability of indigenous energy resources and define and implement the approaches to be adopted to enable their effective use and development, with private sector participation.

8. High System Losses. One fifth of the electricity energy generated is lost in the system either as technical or commercial losses. The current transmission network and sub-transmission network is mainly radial and cannot provide alternative supply route in case of scheduled maintenance or unscheduled outages. In addition, some of the equipment is dilapidated and poses operational challenges for operations staff, whereas others do not have features to enable remote monitoring and control. The sector has in the recent past, with support from the World Bank, undertaken several assessments that have recommended strategies to reduce system losses. Without the implementation of these strategies, there is a likelihood of increased network technical losses, frequent equipment blow-outs, increased downtime due to localized network overloads, and increased network operations and maintenance costs. Investment of about US$1.2 billion is needed in the transmission and distribution system in the next three years in order to improve reliability of supply..

9. High Cost of Service and Sector Financial Viability. Rwanda is particularly hit by high cost of service delivery at about US$0.32/kWh. The current electricity energy mix is about 55/45 percent hydro/thermal, and the thermal generation is based on imported diesel fuel. Regional droughts put additional constraints on the hydropower supply which, exacerbated by lack of adequate grid interconnection capacity, leave Rwanda with limited possibility of sourcing electricity from its neighbors. Furthermore, the electricity system has been operating without a reserve margin. These system constraints overall have led to the continued reliance on rental diesel generators from private companies at a high cost. To address the high cost of service, the sector has prepared a least cost power development plan which will help put in place prioritized investments needed to develop the sector from generation through transmission to distribution, including timing, procedures, implementation responsibilities, and financing requirements. As part of immediate actions to address sector financial recovery, effective September 1, 2015 the average electricity tariff has been raised from 133 Rwf/kWh to 160 Rwf/KWh (US$0.23/kwh) whereby low voltage customers (residential and non-residential customers) will be charged 182 RwF/kwh (US$0.25/ kwh) and medium voltage customers (industrial) will be charged 126 RwF/kwh (US$0.17/kwh. The impacts of tariff revision will be augmented by the ongoing restructuring process that separates electricity from water and sanitation, allowing more direct allocation of cost items and efficiency in operations, such as reduction of system losses. While GoR’s immediate priorities with regard to the sector financial sustainability mainly focus on reducing cost of service and increasing operations efficiency (network loss reductions), it will also continue to provide operations subsidies to the utility. Thus the major challenge remains the need to cover some running costs of the utility to sustain operations.

10. Sector Setup. The institutional structure of the power sector has evolved significantly since the late 1990s (see Figure 3). ELECTROGAZ had a monopoly on the production and distribution of water and electricity until 1999 when a law opened the power sector to private participation. ELECTROGAZ was then placed under a management contract with a private company (Lahmayer International) between 2003 and 2006. However, the main purpose of the management contract – to improve the company operations – was not achieved. In 2008 ELECTROGAZ was split into two semi-autonomous agencies: the Rwanda Energy Corporation (RECO) and the Rwanda Water and Sewerage Corporation (RWASCO). In 2011 the two companies were integrated as the Energy and

Water and Sanitation Authority (EWSA). Lack of autonomy to make decisions in key areas such as determination of organizational structure, recruitment, attraction and retention of staff, procurement, and expenditure approval restricted the various managements' ability to make rapid decisions in the interest of the utility. Opaque cross-subsidization of financial resources affected the financial viability and efficiency of electricity, water, and sanitation services. Finally, an ineffective MIS led to unreliable management information, which further hindered effective decision making.

11. Recognizing that effective institutional arrangements are crucial for the sector's long term sustainability, financial credibility, and increased private sector investments, the GoR has established three corporate companies out of the EWSA: (i) An electricity utility, the Electricity Utility Corporation Limited (EUCL);(ii) An energy development company, the Rwanda Energy Development Corporation Limited (EDCL); and (iii) A company responsible for water supply and sanitation services development and operations, the Rwanda Water and Sanitation Corporation Limited (WASAC). While the government retains ownership of the corporatized entities, the government's role will be significantly reduced as the new utilities will be governed under the company law as opposed to the public service law. The new energy sector entities commenced operations in August 2014.

12. With the new corporate institutional organization, sector oversight and management will now be the primary responsibility of four institutions: (i) the Ministry of Infrastructure (MININFRA) has the primary responsibility for setting the overall policy and strategy of the energy sector, and for coordinating the developments of the electricity sub-sector; (ii) RURA regulates and approves electricity tariffs; (iii) the REG, with its two subsidiaries, EUCL and EDCL, are responsible for electricity utility operations and new energy development activities, respectively. This split of utility operations and energy resource development will allow for clear financial accountability between energy development (non-revenue) and utility operations (revenue generating electricity business)..

13. The capacity of the newly created sector institutions will need to be strengthened to realize improvement in sector performance. A concerted effort to strengthen the human resource and technical capacity of EUCL and EDCL, led by their common Board of Directors, has been made. The Board has approved organizational and compensation structures for the REG, EUCL, and EDCL aimed at attracting and retaining experienced staff. The recruitment of most senior staff is complete. Other than the Chief Executive Officer of REG and Managing Directors of EUCL and EDCL, recruitment of other staff has been carried out through a competitive process. The recruitment targeted national talent, and there is a need to strengthen the technical and management capacity of the newly appointed managers in key functions such as generation, transmission, distribution, human resources, and finance. It is expected that the local staff will have gained adequate experience and skills to able to efficiently manage the utility on their own within three years. The staff will also need tools, such as an integrated MIS, to carry out business process reengineering to achieve the operational improvements envisaged under the sector reform program. Finally, investment prioritization will be undertaken as part of the ongoing financial recovery plan underpinned by the least cost power development plan.

II. Proposed Development Objectives

The Project Development Objective is to enhance the operational efficiency of the electricity utility and increase electricity access.

III. Project Description

Component Name

A. Electricity Sector Capacity Strengthening

Comments (optional)

This component will support EUCL to establish a comprehensive MIS to ensure efficient, transparent, and accountable processes covering network operations and maintenance (O&M); commercial functions; and management of corporate resources. The primary activities will include the design, supply, installation, and operationalization (including staff training) of an integrated MIS with several modules covering commercial, network operation, and corporate functions.

Component Name

B. Increased Access to Electricity Services

Comments (optional)

This component will support investments that will result in 70,000 new connections to the national electricity grid in support of the GoR's electric access program. In addition, the component will support the strengthening of the Kigali 15KV distribution network to provide sufficient capacity to meet increased demand arising out of increased economic activities. Kigali City and its environs constitute the biggest load center in Rwanda, currently consuming about 57 percent of the total energy supplied to the national grid.

Component Name

C. Technical assistance and Project Implementation Support

Comments (optional)

The component will provide Technical Assistance required for the project implementation support in addition to studies required to have in place the requisite plans, bankable projects, and management capacity to foster improved sector expansion and efficient operations, especially those related to grid supply and reliability as well as options for sector development.

IV. Financing *(in USD Million)*

Total Project Cost:	95.00	Total Bank Financing:	95.00
Financing Gap:	0.00		

For Loans/Credits/Others	**Amount**
BORROWER/RECIPIENT	0.00
International Development Association (IDA)	95.00
Total	95.00

V. Implementation

A. Institutional and Implementation Arrangements

The EUCL is the designated project implementing entity. In order to effectively implement the project, EUCL will appoint a Project Manager and will also establish: (i) a Steering Committee chaired by the Managing Director of EUCL to provide leadership and oversight of project implementation; and (ii) Departmental Project Implementation teams (DPIT) in the relevant departments with functions covered in the scope of the project. The procurement, safeguards, financial management, M&E, and project management functions required by EUCL for the implementation of the project will be provided by the existing EARP-PCU at the EDCL.

Sector Coordination. In July 2006, the GoR adopted an Aid Policy setting out aid harmonization and alignment architecture, including setting up Sector Working Groups (SWGs) and a Common Performance Assessment Framework (CPAF) and is integrated into the planning and budgeting processes for monitoring the EDPRS progress. Reporting on the CPAF indicators is led primarily at the sector level through biannual joint sector reviews (JSRs) in advance of the joint budget support review (JBSR). JBSRs and JSRs provide a forum for dialogue around the performance of both the GoR and its development partners. The Energy SWG, chaired by the Permanent Secretary MININFRA, provides a forum for sector dialogue, ownership, and accountability between government, the development partners, and other sector stakeholders to support coordination and harmonization of processes, procedures, implementation, and monitoring of government programs and development partner support. The Energy SWG will be supported by a full time SWG Secretariat comprised of the following: the SWG Coordinator, Economist, External Links and Donor Coordinator, and an M&E Specialist, who will follow the project's activities.

B. Results Monitoring and Evaluation

The M&E activities will be undertaken with support from the EARP-PCU M&E team and the SWG Secretariat. The EARP-PCU will be responsible for collecting, verifying, and collating information, integrating the M&E reports. The SWG will be responsible for integrating the overall sector performance indicators and preparing sector reports for the bi-annual SWG Joint Sector Performance Review discussions. Impact evaluation follow-up surveys and assessments shall be jointly led by the EARP-PCU and the SWG Secretariat with support from specialized technical assistance.

Following the commissioning of the MIS (expected in the third year of project implementation), the EUCL shall prepare a set of key performance indicators (KPIs) covering the key business functions. This will enable tracking performance as a result of improved MIS and staff capacity building activities envisaged under the project. The KPIs shall include both medium-term performance improvement targets and annual work plan targets. The annual targets will be used to develop and implement a performance dashboard that will be used to track and measure performance on a real time basis.

C. Sustainability

The wide-ranging sector reforms aim to put in place systems, processes, and incentives that will allow electricity services to be provided in a sustainable manner. Owned by the GoR, the management improvement plans and financial recovery plan are going to be implemented and managed over a long-term by a new set of professionals recruited competitively from the market. Finally, by focusing on quality of service delivery – expanding access and improving quality – this project will contribute to socio-economic development and firm competitiveness over the long-term.

VI. 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	×	
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		×

Comments (optional)

VII. Contact point

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