PROGRAM INFORMATION DOCUMENT (PID)
CONCEPT STAGE

March 20, 2017
Report No.: AB7881

Operation Name	Rwanda Energy Sector Development Policy Loan
Region	AFRICA
Country	Rwanda
Sector	Energy
Operation ID	P162671
Lending Instrument	Development Policy Lending
Borrower(s)	MINECOFIN
Implementing Agency	MINECOFIN, MININFRA
Date PID Prepared	March 21, 2017
Estimated Date of Appraisal	September 11, 2017
Estimated Date of Board Approval	October 30, 2017
Corporate Review Decision	Following the corporate review, the decision was taken to proceed with the preparation of the operation.
Other Decision	

I. Key development issues and rationale for Bank involvement

1. **In the past two decades, Rwanda has made impressive progress in terms of economic growth and reducing poverty, but severe infrastructure bottlenecks hinder further socio-economic development of the country, particularly in the electricity sector.** Annual GDP growth has averaged 7.5 percent in the last decade, and projections indicate annual GDP growth of up to 8 percent in the coming years. Sustained economic growth has been used effectively as a driver for substantial reductions in both poverty and inequality. Rwanda's poverty levels have dropped from 57 percent in 2006 to 39.1 percent in 2014. Rwanda has also been the leading reformer among African economies in Doing Business indicators, ranking 56 in the world in 2017, second in Africa after Mauritius. Despite these achievements in reducing poverty, Rwanda remains one of the poorest countries in the world, with a GDP per capita of US$697.3 in 2015. More than three out of four Rwandans, to a great extend located in rural areas, lack access to electricity. The electrification rate, about 24 percent as of end-2016, remains largely concentrated in the top quintile, with almost negligible coverage in the bottom 40 percent of the population. Access, reliability, and cost of electricity are primary constraints to scaling-up investment flows, as articulated in Rwanda's Investment Climate Report. Firms suffer from the high price of electricity compared to neighboring countries. 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.

2. **To expand electricity supply, the Government is procuring new domestic generation capacity through negotiated agreements with project developers and expanding interconnections with neighboring countries.** With limited domestic resources of oil, gas and

hydropower, the Government's supply options are constrained to small and medium-sized hydro, plants using unconventional fuels such as peat and lake methane (which are usually limited in size and relatively costly), generation capacity based on imported fuels, and power imports. Despite these challenges, the Government has managed to attract direct investment by several independent power producers (IPPs), and several regional hydropower plans are under development. Generation capacity tripled from 76MW in 2010 to 208MW in January 2017. This new capacity has reduced planned load shedding even as the number of grid-connected households rose from 6 percent in 2009 to 24 percent in 2016. New transmission projects and upgrades are under way to strengthen the network and expand trade capacity with neighboring countries, including a 98km, 200kV transmission line connecting Rwanda with Uganda and a 167km, 220kV transmission line connecting Rwanda with DRC. A first transaction for power imports from Kenya is in place since 2015; the Government is in discussions to secure imports of 400MW from Ethiopia in the medium-term.

3. **To expand affordable access, the Government is pursuing a two-pronged strategy of publicly financed on-grid solutions and off-grid private-sector investment in areas where extending the grid is not financially viable in the short term.** Investments in grid expansion have increased grid connections to 100 percent of hospitals, 85 percent of health centers, 92 percent of administrative offices and 54 percent of primary and secondary schools. Where grid-connections are not feasible in the short term, the Government aims to expand off-grid solutions in the form of solar home-systems and mini-grids; to improve affordability of off-grid solutions, especially for rural population, the Government is looking for ways to improve households' access to affordable finance.

4. **However, Rwanda's recent trajectory of system expansion could become fiscally unsustainable without delivering on affordability objectives.** Electricity supply is expensive due to limited domestic energy resources while tariffs—although among the highest in the region—are below cost recovery as low incomes limit consumers' ability to pay for electricity services. Until recently, existing energy sector policies were widening the gap between sector costs and revenues. Asset utilization has been inefficient due to high tariffs and unaffordable connection costs that disincentivize consumption, especially by newly added customers. Additional supply capacity has been procured without adhering to least-cost principles, leading to increased unit costs of supply. Under a business-as-usual scenario, the fiscal transfers needed to sustain operations in the sector are expected to increase significantly by 2020. At the same time, electricity remains unaffordable even for many consumers with grid connections. The challenge to the Government of Rwanda is how to power economic growth and achieve universal access, while balancing affordability with the financial sustainability of the sector, given resources and low-income constraints.

5. **The Government has put in place a medium-term program of policy and regulatory reforms to expand the sector in a more sustainable manner.** First, the Government aims to establish a fiscal policy framework for the electricity sector and enhance financial transparency. Key measures include identifying a sustainable and acceptable trajectory of reaching sector financial sustainability in medium term. This is to be achieved through assessing efficient sector revenue requirements in medium term, examining options to achieve those while improving financial transparency of REG. Second, the Government aims to expand electricity supply and advance access in a cost-efficient and affordable manner. This is to be achieved by adopting

least-cost capacity, transmission and distribution planning and promoting demand growth — including through changes in the tariff structure —that can be served cost-effectively. Third, the Government aims to improve operational efficiency of REG to decrease its costs. Key measures include improving resource management in the utility, systematic monitoring of quality of customers' commercial service and quality of electricity supply and independent performance audits of EUCL.

6. **The World Bank has been a major strategic partner in Rwanda's electricity sector development and has been actively involved in formulation and in reviews of the proposed Government program.** Through different operations, it has supported the Government with reforming Rwanda energy utility and improving its efficiency; assisted with asset and liability evaluation, sector capacity needs assessments and energy sector agencies' capacity strengthening; it has initiated a comprehensive assessment of financial viability of the energy sector. The Bank has also advised the Government in formulating its recently adopted Rural Electrification Strategy.

7. **The World Bank assesses that Rwanda's macroeconomic policy framework remains adequate for Development Policy Credits on the basis of the January 2017 review of IMF Standby Credit Facility (SCF).** Rwanda's prudent macroeconomic policy has enabled the country to achieve high economic growth and macroeconomic stability in the past decade. Both monetary and fiscal policy have been coordinated and implemented in a prudent manner. However, import dependence is high and a difficult external environment compounded pressure on foreign reserves with visible impact in 2015-16. To mitigate future risks, the authorities have received IMF's financing under the SCF and committed to undertaking adjustment measures to mute domestic absorption and ease current account strains. Rwanda successfully completed its first review of IMF SCF in January 2017, in which the Fund confirmed that Rwanda has a track record of strong policy performance that has led to sustained high growth, progress in reducing poverty, and a stable macroeconomic situation.

II. Proposed Objective(s)

8. **The proposed program development objectives (PDOs) of the programmatic series are:** (i) improving the financial sustainability and accountability of the energy sector; (ii) expanding electricity supply, demand and access in a cost-efficient and affordable manner; and (iii) enhancing the operational efficiency of the utility.

III. Preliminary Description

9. The operation is structured in three pillars, which are aligned with the main objectives of the Government program and also form the program development objectives (PDO) of the operation: (i) improving the financial sustainability and accountability of the energy sector; (ii) expanding electricity supply, demand and access in a cost-efficient and affordable manner; and (iii) enhancing the operational efficiency of the utility.

10. The operation will support the Government in implementing its medium-term program and reach its ambitious energy targets by 2020. To ensure that the fiscal impact of the sector is contained and transparent, the Government aims to contain its subsidies to the sector as

percentage of GDP and to transition to fully IFRS-compliant financial statements for the sector utility. To expand electricity supply and advance access in a cost-efficient and affordable manner, the Government aims to transition towards competitive procurement processes compliant with the PPP Law, to procure new generation and transmission projects according to the outcomes of the Least Cost Power Development Plan (LCPDP); and to reach a grid-based electrification rate countrywide (percentage of households) of at least [36] percent. To enhance the operational efficiency of the utility, the Government aims to reduce the total commercial losses as a percentage of electricity supply from 7.7 percent in 2017 to 5 percent by 2020; to reduce the average duration of interruptions (SAIDI); and to complete annual customer satisfaction surveys.

IV. Poverty and Social Impacts and Environment Aspects

11. **The proposed policy reforms are expected to contribute to the overall objective of the EDPRS-2 and the Vision 2020 to reduce poverty and vulnerability.** Access to reliable electricity service improves lives of the poor by decreasing energy expenditures from moving from traditional energy sources (kerosene or diesel) to electricity, improving quality of life through the provision of higher quality of lighting compared to kerosene lamps and health benefits expected because of the reduction of indoor air pollution. Access to grid electricity and the related time gains also enables newly connected consumers to undertake productive and income generating activities as well as children to study. Electricity also improves the service provided by public institutions, such as health, education, water, and public administration.

12. **As a recent survey conducted as part of the ongoing Rwanda Electricity Access Scale-up and Sector Wide Approach (eSWAp) Development Project (EASSDP) concluded, households with electricity access have lower household expenditures on energy.** In treatment households less expenditure on energy was reported than in control households. This is an indication that electricity may have influenced the reduction of expenditure that were allocated to the type of energy consumed by treatment households before electrification. At the same time, the treatment households reported considerably higher weekly expenditure on food.

13. **The specific policies supported by the DPC series are not expected to have any negative effects on Rwanda’s environment, forests, water resources, habitats or other natural resources.** The risk of unanticipated adverse effects to the environment is modest. Rwanda has in place adequate environmental controls and legislation under the mandate of Rwanda Environment Management Authority (REMA), providing support to line ministries including MININFRA in incorporating environmental guidelines in the operational manual for its programs. Also, the World Bank is supporting REMA with technical assistance to take into account climate risks and opportunities and on land policy related issues technical assistance to review sustainable land management practices.

V. Tentative financing

Source:	($m.)
BORROWER/RECIPIENT	0.00
International Development Association (IDA)	125.00
Borrower/Recipient	

IBRD
Others (specify)

		Total	125.00

VI. Contact point

World Bank
Contact: Yadviga Semikolenova
Title: Senior Energy Economist
Tel: +1-202-473-7631
Email: ysemikolenova@worldbank.org

Borrower
Contact: Ronald Nkusi
Title: Director, External Finance Unit, Ministry of Finance and Economic Planning
Tel: +250-252596130
Email: Ronald.nkusi@minecofin.gov.rw

VII. For more information contact:

The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Web: http://www.worldbank.org/infoshop