



Program Information Document (PID)

Concept Stage | Date Prepared/Updated: 28-May-2019 | Report No: PIDC25870



BASIC INFORMATION

A. Basic Project Data

Country Rwanda	Project ID P169040	Project Name Third Rwanda Energy Sector Development Policy Operation (P169040)	Parent Project ID (if any) P166458
Region AFRICA	Estimated Board Date Nov 15, 2019	Practice Area (Lead) Energy & Extractives	Financing Instrument Development Policy Financing
Borrower(s) MINECOFIN	Implementing Agency MININFRA, MINECOFIN		

Proposed Development Objective(s)

The Program Development Objective (PDO) of the proposed operation is to enable fiscally sustainable expansion of electricity services in Rwanda. The proposed operation is built around two pillars: (i) containing the fiscal impact of the electricity sector; and (ii) improving the operational efficiency, affordability, and accountability of electricity service.

Financing (in US\$, Millions)

SUMMARY

Total Financing	125.00
------------------------	--------

DETAILS

Total World Bank Group Financing	125.00
World Bank Lending	125.00

Decision

The review did authorize the preparation to continue



B. Introduction and Context

Country Context

The proposed Energy Sector Development Policy Operation (DPO) is the third and last in a programmatic series of three DPOs. The Government's reform program aims at balancing the triple objectives of achieving ambitious expansion targets for electricity generation and access while containing fiscal transfers to the sector and enhancing the affordability and quality of electricity service for consumers. In line with the Government's program, the PDO of the proposed operation is to enable fiscally sustainable expansion of electricity services in Rwanda. The proposed operation is built around two pillars: (a) containing fiscal impact of the electricity sector; and (b) improving operational efficiency, affordability, and accountability of electricity service. The credit amount of SDR 88.5 million under the first operation was disbursed in December 2017 and SDR 89.6 million under the second operation was disbursed at the end of December 2018.

This DPO series supports a Government reform program that proactively addresses the fiscal risks related to achieving universal access to affordable, sustainable, and reliable electricity by 2024. The main rationale for the series is to avoid a projected escalation of fiscal transfers, driven by (i) Rwanda's already-high cost of electricity service delivery, which are among the highest in the region (around US\$0.28 per kilowatt hour (kWh) in FY2017/18); (ii) ambitions for rapid electrification and system expansion during NST1 (2017-2024), largely financed by public investments; (iii) generation investment planning inconsistent with least-cost planning principles; (iv) procurement processes for public-private partnerships (PPP) inconsistent with competitive procedures; and (v) the limited scope for tariff increases as electricity is already barely affordable for much of the population. **Error! Reference source not found.** shows a schematic representation of the underlying theory of change. The PDO is supported by two main pillars. Pillar A contains measures led by the Ministry of Finance and Economic Planning (MINECOFIN) and the Rwanda Utilities Regulatory Authority (RURA) that directly contain the fiscal impact of the power sector, including tariff reforms. Pillar B contains measures led by Ministry of Infrastructure (MININFRA) and REG that improve the operational efficiency, affordability and accountability of electricity service, divided into four themes: (i) Transitioning Rwanda to a least-cost and low-carbon energy mix; (ii) Increasing access to affordable and reliable electricity—specifically, the adoption of least-cost principles in the expansion of electricity access; (iii) Improving the accountability and transparency of REG—specifically, the modernization of REG's accounting and the publication of its financial statements, which is a critical step towards the listing of REG and improving transparency to REG's balance sheet; and (iv) Improving the operational efficiency and quality of electricity services, which will lead to lower cost of service and higher revenues.

Relationship to CPF

The focus on energy by this program is directly aligned with the most recent Rwanda Country Partnership Strategy FY2014–2018, which was extended through 2020 (Report No. 87025-RW)¹. The series contributes directly to Theme 1: "Accelerating economic growth that is private sector driven and job-creating." Under this theme, energy is highlighted as the key sector for World Bank support because increased access to electricity/energy services is core to both increased private sector investment and improved social welfare.

The series is also aligned with the World Bank's twin goals, the IDA18 special themes and the World Bank's energy sector strategy. Increased access to reliable and affordable electricity supply lowers the cost of doing business, promotes job creation, improves citizens' connectivity and access to opportunity, and strengthens resilience to climate change. Through these effects, the DPO is aligned with the World Bank Group's twin goals of reducing poverty and promoting

¹ The Country Partnership Strategy has been extended till 2020 as per the Performance and Learning Review of the Country Partnership Strategy that was presented to the Board on March 20, 2017 (Report No 106731-RW)



shared prosperity and supports two of the IDA18 themes and priorities (job creation, economic transformation, and climate change). The proposed program follows the strategy laid out in the World Bank’s Energy Directions Paper (2012), which presents the World Bank’s sector strategy for helping client countries secure affordable, reliable, and sustainable energy supply needed to meet the twin goals.

C. Proposed Development Objective(s)

The Program Development Objective (PDO) of the proposed operation is to enable fiscally sustainable expansion of electricity services in Rwanda. The proposed operation is built around two pillars: (i) containing the fiscal impact of the electricity sector; and (ii) improving the operational efficiency, affordability, and accountability of electricity service.

Key Results

Result indicators under the three-part DPO series are categorized under the two pillars and constituting sub-pillars as follows:

Indicator	Baseline	Target
A1. Contain electricity subsidies as % of GDP	1.4% (FY2016/17)	Not more than 1.7% (FY2019/20)
A2. Implement the quarterly automatic tariff adjustment	No (FY2016/17)	Yes (FY2020/21)
B1. Ensure all generation and transmission projects initiated or accepted by the Government over the past 24 months are consistent with the LCPDP and comply with the PPP Law and competitive procurement procedures.	No (September 2017)	Yes (December 2020)
B2. Expand electrification rate countrywide	40.7% On-grid: 29.7% Off-grid: 11%	61% On-grid:38% Off-grid:23%
B3. Expand electrification rate among rural households	16% (June 2017)	25% (December 2020)
B4. The independent audits of REG, EDCL and EUCL are in compliance with IFRS, without qualifications and published within the first quarter of the following year.	No (September 2017)	Yes (December 2020)
B5. Reduce total electricity sector losses as a percentage of electricity supply	22% (FY2017/18)	19% (FY2020/21)
B6. Reduce average duration of interruptions (SAIDI) and average frequency of interruptions (SAIFI)	2017: SAIDI: 44 hours; SAIFI: 265.	2020: SAIDI: 28 hours; SAIFI: 183.4.
B7. Implement and publish annual customer satisfaction survey	No (2017)	Yes (2020)

D. Concept Description

The proposed energy sector DPO in the amount of SDR [TBC] million (equivalent to US\$125 million) is the third and last in a programmatic series of three DPOs. The PDO of the proposed operation is to enable fiscally sustainable expansion of electricity services in Rwanda. The proposed operation is built around two pillars: (a) containing fiscal impact of the electricity sector and (b) improving the operational efficiency, affordability, and accountability of electricity service.

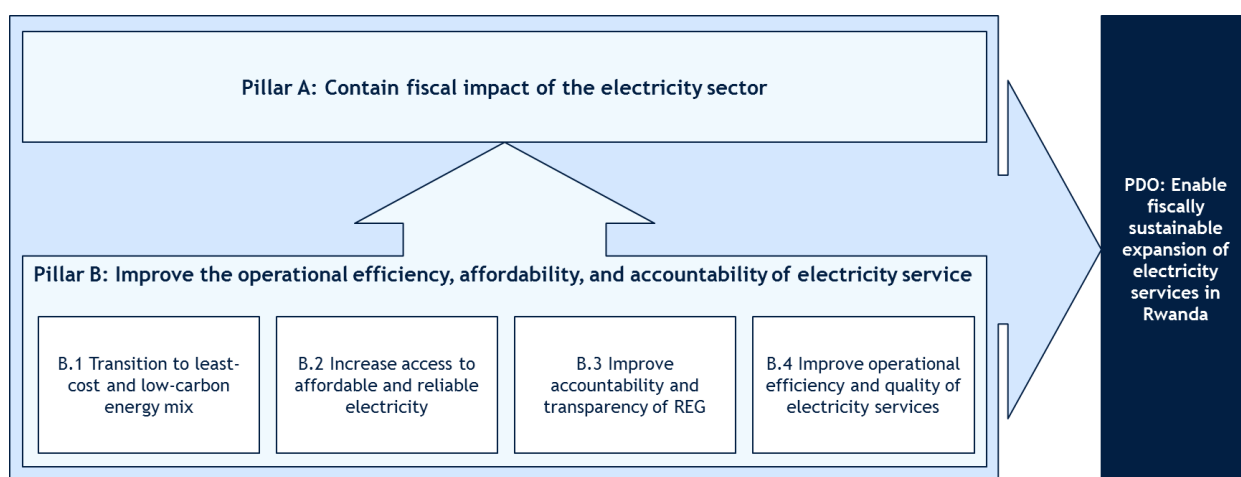
To proactively address the fiscal risks from the electricity sector, this DPO series supports a program that includes measures to respond to the urgency of the situation but also lay the foundation for a sustainable sector capable of



providing reliable and affordable energy services. This short- to medium-term reform program is underpinned by the principles of least-cost planning, competition, accountability, and operational efficiency and consists of the following main elements:

- (a) Putting in place a fiscal framework for the electricity sector that balances the Government’s sector expenditure priorities and fiscal sustainability objectives (supported under Pillar A of this DPO series, see **Error! Reference source not found.**);
- (b) Institutionalizing least-cost principles in the scheduling and procurement of new power plants, including in the short term, by moving from ad hoc, bilaterally negotiated investments to adoption of least-cost sector planning and competitive procurement, as well as including strengthened regional electricity trade in least-cost planning (Pillar B.1);
- (c) Promoting the transition to low-carbon energy by reforming the legal framework for renewable energy generation and developing grid-connected hydropower and solar power (Pillar B.1) and by removing barriers for off-grid solar energy (Pillar B.2);
- (d) Reforming its electrification program to make electricity access more affordable, including by leveraging the private sector for mini-grids and off-grid solar (Pillar B.2);
- (e) Taking measures—including the transition to International Financial Reporting Standards (IFRS)-compliant accounting and commercial independence—to improve transparency of fiscal impacts and enable REG, which is in charge of electricity utility services provision to tap commercial financing for sector expansion and become a financially viable off-taker (Pillar B.3); and
- (f) Improving operational efficiency of REG, through strengthened resource management in the utility, systematic monitoring of quality of customers’ commercial service and quality of electricity supply, and independent performance evaluation of REG (Pillar B.4).

Figure 1: Link between DPO Pillars and Expected Outcomes (‘Theory of Change’)





E. Poverty and Social Impacts and Environmental Aspects

Poverty and Social Impacts

Recent improvements in energy sector outcomes, especially enhanced electricity access, are associated with a measurable impact on household welfare. As part of the broader commitment by the World Bank to enhance the development impact of the resources provided to recipient countries, the recently closed EASSDP was one of four energy projects selected in the World Bank’s Africa Region for impact evaluation. Findings from a survey-based analysis show significant difference between treatment and control villages on several socioeconomic indicators of the population, for instance, the percentage of people who moved from agriculture to non-agriculture, the percentage of permanent material for house walls, the percentage of people offering or benefiting from trainings on income-generating activities, opinions on women and children’s rights, and the percentage of women who indicated that they can make their own decisions, which significantly increased from 44 percent in the control villages to 51 percent in treatment villages. A difference-in-differences analysis intended to distill the sole effect of electrification from other factors showed that the effect of electricity on most of the household welfare indicators is positive and significant. The impact is found to have come through increased income and consumption spending, quality and value of houses, and asset creation, which could be interpreted as an improvement in well-being. Also, the impact of electricity has decreased the household monthly energy expenditure (excluding electricity), biomass collection costs and time and non-biomass energy costs—this would mean that households used electricity as a substitute to biomass and non-biomass energy needs, especially for lighting. Access to electricity also has a positive impact on increasing the number of hours worked per day. It has an impact, as well, on the education of children (number of hours studied at home per day after sunset for schooling children) and time used for tutoring children.²

Environmental Impacts

The specific policies supported by the DPO series are not expected to have significant 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 (see Annex 4). Rwanda has in place adequate environmental controls and legislations under the mandate of the Rwanda Environment Management Authority (REMA), providing support to the line ministries, including MININFRA, in incorporating environmental guidelines in the operational manual for its programs. Also, the World Bank is supporting REMA with TA to take into account climate risks and opportunities and with land policy TA to review sustainable land management practices.

CONTACT POINT

World Bank

Yadviga Viktorivna Semikolenova, Joern Torsten Huenteler
Senior Energy Economist

Borrower/Client/Recipient

² The ‘Impact Evaluation of the Rwanda Electricity Access Rollout Program (EARP) and SWAp Development Project’ was conducted by REG with the support of the World Bank. The baseline survey was completed in 2014 and the follow-up survey was conducted in 2016. The report provides unprecedented information on the use of energy and its impact on socioeconomic welfare.



MINECOFIN

Implementing Agencies

MININFRA

Peace Kaliisa

Ms.

Kaliisa.peace@gmail.com

MINECOFIN

Ronald Nkusi

Mr.

ronald.nkusi@minecofin.gov.rw

FOR MORE INFORMATION CONTACT

The World Bank

1818 H Street, NW

Washington, D.C. 20433

Telephone: (202) 473-1000

Web: <http://www.worldbank.org/projects>

APPROVAL

Task Team Leader(s):

Yadviga Viktorivna Semikolenova, Joern Torsten Huenteler

Approved By

Country Director:

Yasser El-Gammal

13-Jun-2019