BASIC INFORMATION

A. Basic Project Data

<table>
<thead>
<tr>
<th>Country</th>
<th>Project ID</th>
<th>Project Name</th>
<th>Parent Project ID (if any)</th>
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<tbody>
<tr>
<td>Rwanda</td>
<td>P169040</td>
<td>Third Rwanda Energy Sector Development Policy Operation (P169040)</td>
<td>P166458</td>
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<table>
<thead>
<tr>
<th>Region</th>
<th>Estimated Board Date</th>
<th>Practice Area (Lead)</th>
<th>Financing Instrument</th>
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<tbody>
<tr>
<td>AFRICA</td>
<td>30-Aug-2019</td>
<td>Energy &amp; Extractives</td>
<td>Development Policy Financing</td>
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<table>
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<tr>
<th>Borrower(s)</th>
<th>Implementing Agency</th>
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<tr>
<td>MINECOFIN</td>
<td>MININFRA, MINECOFIN</td>
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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

<table>
<thead>
<tr>
<th>Total World Bank Group Financing</th>
<th>125.00</th>
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<tbody>
<tr>
<td>World Bank Lending</td>
<td>125.00</td>
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</table>

Decision
The review did authorize the team to appraise and negotiate
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.

Rwanda is recognized as a leading reformer in Sub-Saharan Africa, with impressive performance in poverty reduction. The country has a strong record of reform implementation under programmatic DPOs. Annual gross domestic product (GDP) growth has averaged 7.5 percent in the last decade. Rwanda’s poverty levels have dropped from 57 percent in 2006 to 39 percent in 2018, according to the latest Integrated Household Living Conditions Survey (EICV5). Rwanda has also been the leading reformer among African economies in the Doing Business indicators: observing among the fastest improvement in rankings, it moved from a global rank of 148 in 2008 to 29 in 2019, which is second in Africa after Mauritius. However, GDP per capita, which stood at US$748 in 2017, remains substantially below the average for Sub-Saharan Africa, and Rwanda remains one of the poorest countries in the world, with significant infrastructure investments needed for its socioeconomic development. The Government has demonstrated its strong commitment and ability to sustain programmatic reform efforts, including under three consecutive series of World Bank DPOs in the social protection (SP) sector (a total of nine operations over 2009–2017). The Government delivered on the agreed program and implemented deep SP reforms that established a good practice SP program (the Vision 2020 Umurenge Program [VUP], which covers about 300,000 households and institutionalized efficiency, accountability, and transparency throughout the SP system. Moreover, 100 percent of Rwanda’s World Bank projects completed in 2011–2016 have been rated Moderately Satisfactory and above by the World Bank’s Independent Evaluation Group (IEG).

With a rapid increase in electrification rates and installed electricity capacity, Rwanda’s energy sector has emerged as a success story in Africa. Rwanda’s progress in electrification during 2010–2016 ranked 11th globally and 3rd in Africa. Among the 20 least-electrified countries, none made more progress than Rwanda during that period. Investments in grid extension have increased grid connections from 6 percent in 2009 to 37 percent at the end of February 2019. Off-grid access has more than doubled since 2016 and is estimated at 14 percent at the end of February 2019. This puts the nationwide electrification rate at 51 percent. The grid covers, as of August 2018, 100 percent of hospitals, 92.1 percent of health centers, 94.5 percent of administrative offices, and 77.2 percent of primary and secondary schools [to be updated]. Rwanda has also taken a number of steps to improve efficiency of its energy sector operations. In 2014, the Government of Rwanda (GoR) restructured the key energy sector institutions by creating a separate Rwanda Energy Group (REG), with the aim to strengthen accountability, grant operational independence, and create a financially viable off-taker for private sector contracts (see Annex 6). The generation capacity tripled from 76 megawatt (MW) in 2010 to 220 MW in December 2018 with 53.5 percent renewable energy installed capacity. A total of 17 independent power producers (IPPs) now supply power to REG, making Rwanda a pioneer in the Maximizing Financing for Development agenda in the energy sector in Africa (as of 2017, 52 percent of generation capacity was under private ownership). In the World Indicators for Sustainable Energy (RISE) framework, Rwanda is among the top performers in East Africa and has particularly high scores in indicators associated with
renewable energy.

Relationship to CPF

The focus on energy by this program is directly aligned with the most recent Rwanda Country Partnership Strategy FY2014–2018 (Report No. 87025-RW) and also with the World Bank’s twin goals. The series contributes directly to Theme 1 of the Country Partnership Strategy: “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. Besides, 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’s twin goals of reducing poverty and promoting shared prosperity.

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:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Baseline</th>
<th>Target</th>
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<tbody>
<tr>
<td>A1. Contain electricity subsidies as % of GDP&lt;sup&gt;1&lt;/sup&gt;</td>
<td>FY2016/17: 1.4% of GDP.</td>
<td>FY2020/21: No more than 1.5% of GDP.</td>
</tr>
<tr>
<td>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.</td>
<td>September 2017: No.</td>
<td>December 2020: Yes.</td>
</tr>
<tr>
<td>B2. Expand electrification rate countrywide (percentage of households)</td>
<td>September 2017: 40.7% nationwide (29.7% on-grid and 11% off-grid) 2016: 21% among female-headed households.</td>
<td>June 2020: 61% nationwide (38% on-grid and 23% off-grid); 42% among female-headed households.</td>
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<tr>
<td>B3. Expand electrification rate among rural households (percentage of households)</td>
<td>June 2017: 16%.</td>
<td>December 2020: 25%</td>
</tr>
<tr>
<td>B4. The independent audits of REG, EDCL and EUCL are in compliance with IFRS, without qualifications and published within two quarters of the following year</td>
<td>September 2017: No.</td>
<td>December 2020: Yes.</td>
</tr>
<tr>
<td>B5. Reduce total electricity sector losses as a percentage of electricity supply</td>
<td>FY2017/18: 22%.</td>
<td>FY2020/21: 19%.</td>
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<sup>1</sup> Here, the Government subsidies are defined as budget transfers to the electricity sector as recorded in the official Government budget, including transfers for investment and operational expenditures.
### Indicator Baseline Target

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<th>Target</th>
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<tbody>
<tr>
<td>B6. Reduce average duration of interruptions (SAIDI) and average frequency of interruptions (SAIFI)</td>
<td>2017: SAIDI: 44 hours; SAIFI: 265.</td>
<td>2020: SAIDI: 28 hours; SAIFI: 183.4.</td>
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### D. Project Description

The proposed Energy Sector DPO in the amount of SDR [tbc] million (equivalent to US$125 million) is the third 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) contain fiscal impact of the electricity sector and (b) improve 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, captured through the prior actions:

(a) Putting in place a fiscal policy 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 offtaker (Pillar B.3)

(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)
**E. Implementation**

Institutional and Implementation Arrangements

The operation is jointly implemented by MINECOFIN and MININFRA. Monitoring the progress toward the achievement of the program’s objectives is the responsibility of the line ministry, MININFRA, with support from the REG and its subsidiaries. To facilitate the process, MININFRA has established a working group with representatives from MINECOFIN, MININFRA, the REG, and its subsidiaries. In addition, a high-level Steering Committee has been set up to coordinate DPO 2 and DPO 3 and address any challenges in real time.

**F. Poverty and Social Impacts and Environmental Aspects**

Poverty and Social Impacts

The prior actions under this operation are expected to have substantially positive poverty and social impacts by providing access to reliable and affordable electricity service of improved quality to households and businesses. Relevant reform measures underpinning the prior actions of DPO 3 include tariff review to raise average cost-recovery level establishing competitive procurement procedures for privately owned energy infrastructure, adoption of
technically sound planning and investment procedures for expanding electricity access to all households and improving overall quality of supply of electricity. Taken together, these measures are expected to increase REG’s revenues, bring down the cost of supply of electricity, and enhance the availability, reliability, and quality of electricity supply to households and businesses. The tariff reviews in 2017 and 2018 have raised average tariffs while having minimal poverty impacts because almost all household consumption has been exempt from tariff increases. The development of new energy infrastructure, including of mini-grids, will follow international best practices with regard to land acquisition, an area where Rwanda has a good track record. A simplified licensing framework for mini-grids that has been approved by Rwanda Utilities Regulatory Authority (RURA) will ensure that project implementation conforms to national standards and that consumers are protected. The development impacts of these measures are expected to be driven through the typical channels through which electricity access helps alleviate poverty. For instance, the Impact Evaluation of the Rwanda Electricity Access Rollout Program and Sectorwide Approach Development Project found several positive impacts of electricity access, such as: increased income and consumption spending, quality and value of houses, and asset creation. Electrification was also found to decrease household monthly energy expenditure (excluding electricity) and biomass collection costs and time and increase time spent on education by children and time used for tutoring children.

Environmental Aspects

The specific policies supported by this operation are not expected to have any negative effects on Rwanda’s environment, forests, water resources, habitats or other natural resources, while certain prior actions are expected to have positive environmental impacts by supporting the development of renewable electricity in Rwanda. By following least cost planning procedures and institutionalizing competitive procurement of electricity, the reforms under this operation are expected to improve the utilization of low-cost hydropower in the electricity mix and reduce the need for expensive and polluting fossil fuel capacity. Furthermore, adoption of planning and investment procedures to expand electricity access through off-grid sources would also facilitate substantial expansion of renewable sources of electricity. No prior actions under the operation are expected to have any negative environmental effects. Besides, 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. The World Bank is supporting REMA with technical assistance to take into account climate risks and opportunities and on land policy related issues, along with technical assistance to review sustainable land management practices.

G. Risks and Mitigation

The main risks to the PDO relate to sector strategies and policies, institutional capacity and stakeholders. To mitigate risks related to sector strategies and policies, the results indicators of this operation are outcome oriented, and MININFRA is committed to continuously monitoring progress of the LCPDP, procurement of new generation capacity, electrification targets, access policies and regulations, and implementation of utility reforms. The Government’s overall reform track record is widely recognized and gives confidence in the Government’s ability to sustain implementation of programmatic reform efforts. Strong continuity of reforms was demonstrated, for instance, under three consecutive series of World Bank-supported DPOs in the SP sector (a total of nine operations over 2009–2017). To mitigate risks related to implementation capacity, the World Bank is providing additional World Bank-executed TA, including the financing of experts to coach and mentor new utility staff in the aspects of utility operations and management; additional technical advisers will be provided to MININFRA and the REG, if the need arises. To mitigate stakeholder risk, the Government is using the existing system of public consultations in Rwanda: public discussions of the important policy documents through technical working groups and the Energy Sector Working Group. The existing practices of
public consultations have been proven critical in reaching consensus on sector reforms in Rwanda. It has been used for discussing outcomes of the LCPDP, development of the NEP, enforcement of off-grid standards, design of incentive scheme for off-grid, and other prior actions under this operation.

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Task Team Leader(s): Yadviga Viktorivna Semikolenova, Joern Torsten Huenteler
Approved By

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<th>Country Director</th>
<th>Yasser Aabdel-Aleem Awny El-Gammal</th>
<th>26-Jun-2019</th>
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