Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 20-Dec-2019 | Report No: PIDC28261

Public Disclosure Authorized

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Rwanda	P172594		Rwanda - Energy Access and Quality Improvement Project (P172594)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
AFRICA	Jul 20, 2020	Sep 30, 2020	Energy & Extractives
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Ministry of Finance and Economic Planning (MINECOFIN)	Rwanda Energy Group, Rwanda Development Bank	

Proposed Development Objective(s)

Improve access to energy and efficiency of energy service delivery to households, businesses and public institutions in Rwanda.

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	150.00
Total Financing	150.00
of which IBRD/IDA	150.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	150.00
IDA Credit	150.00

Environmental and Social Risk Classification	Concept Review Decision

Substantial	Track II-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Rwanda is recognized as a leading reformer in Sub-Saharan Africa but remains one of the poorest countries in the world with significant infrastructure investments needed for its socio-economic development.** Rwanda's annual gross domestic product (GDP) growth has averaged 7.2 percent in the last decade. Rwanda has also been a frontrunner among African economies in the Doing Business indicators: it moved from a global rank of 148 in 2008 to 38 in 2020, which is second in Sub-Saharan Africa after Mauritius.[1] However, GDP per capita, which stood at US$773 in 2018, remains substantially below the average for Sub-Saharan Africa, and Rwanda remains one of the poorest countries in the world. Infrastructure gaps, including in electricity, remain substantial.

2. **The recent economic performance in Rwanda has continued to be robust, with low risk of debt distress**. In 2018, the economy expanded at a brisk pace, achieving 8.6 percent growth, the highest on the continent and well above Rwanda's average growth of the past 10 years of 7.2 percent. Investments were the main driver of growth expanding by 23.5 percent supported by strong public investments. After a stagnation in 2016 and 2017, private consumption grew by 6 percent. Contribution of net exports to the growth, however, turned negative in 2018 as Rwanda's export sector was not able to maintain the strong momentum achieved in 2017. Public and publicly guaranteed debt stood at 53 percent of GDP in 2018, much of it external. The debt distress risk remains low. Interest payments were 1.2 percent of GDP in 2018.

3. **Poverty has declined substantially in the past two decades but remains high in rural areas, where access to public services such as electricity is still low.** Between 2001 and 2017 poverty as measured by the international poverty line fell from 77.2 to 55.5 percent, and poverty measured by the national poverty line fell from 58.9 to 38.2 percent, according to the latest Integrated Household Living Conditions Survey (the fifth *Enquête Intégrale sur les Conditions de Vie,* EICV5). Poverty has also become less severe, with a shrinking gap between average consumption of the poor and the poverty line. However, despite Rwanda's good record in poverty reduction, the most recent household survey showed that poverty reduction stagnated between 2014 and 2017 because of droughts, a slowing in structural transformation and rural to urban transition, and a weakening of the job-creating potential of Rwanda's recent growth. More than 90 percent of the poor in Rwanda live in rural areas, especially in the Southern, Western, and Eastern provinces. There is a high coincidence of poverty and the lack of access to public services including electricity, even as electricity access doubled for rural households between 2013/14 and 2016/17, from 9 percent to 15 percent, but remains far too low for Rwanda's development ambitions.

4. **Rwanda's development strategy is laid out in its latest seven-year plan, the National Strategy for Transformation (NST1) for 2017–2024, which includes the ambition to reach universal access to electricity by 2024.** The NST1 aims to lay the foundation for achieving upper-middle-income country status by 2035 and high-income status by 2050. It is guided by the Sustainable Development Goals (SDGs), the Africa Union Agenda 2063

[1] https://www.doingbusiness.org/en/rankings?region=sub-saharan-africa

and its First 10-Year Implementation Plan 2014–2023, and the East African Community (EAC) Vision 2050. The strategy lays out targets under the three pillars of economic transformation, social transformation, and transformational governance, and several cross-cutting areas. Under the social transformation pillar, NST1 aims to achieve universal electricity access by the end of the seven-year period.

5. **The Government of Rwanda (GoR) has also demonstrated its ability to implement large-scale investment programs[2] that pool funds from multiple development partners under a 'Sector Wide Approach', including in the energy sector.** A decade ago, the GoR set up the Sector Wide Approach (SWAp) framework across sectors of the economy, including in energy, which provides the GoR with a vehicle to steer away from fragmented development fund delivery toward a sector development perspective led by the Government and shaped by the basic tenets of donor engagement. Both the framework and the process were anchored by national priorities, alignment, harmonization, and joint accountability in managing results. Sector Working Groups (SWGs), which include government departments, development partners, private sector, NGOs, and civil society organizations, were set up in each sector to implement their respective SWAps. The SWAp framework allowed the GoR to pool funds from several donors in sectoral programs, such as the Energy Access Roll-out Program (EARP) in the energy sector, which has pooled a total of around US$360m between 2009 and 2018 from BADEA, the Government of Japan, the Government of Netherlands, the OPEC Fund, the Saudi Fund, the World Bank, the Belgian Embassy and the African Development Bank (AfDB).

Sectoral and Institutional Context

6. **Electricity services in Rwanda are provided by Rwanda Energy Group (REG), under the oversight of the Ministry of Infrastructure (MININFRA).** REG is a Government owned holding company comprising two independent subsidiaries, the Energy Utility Corporation Limited (EUCL) and the Energy Development Corporation Limited (EDCL). The EUCL is a vertically integrated utility which owns certain generation assets and buys electricity from IPPs, along with maintaining the transmission and distribution network, and providing electricity to consumers. The EDCL is responsible for building assets (generation as well as transmission/distribution), which are transferred to the EUCL upon completion. MININFRA oversees the investment as well as operations of REG as the governing ministry. The Rwanda Utilities Regulatory Agency (RURA), an independent regulator, evaluates the revenue requirements of REG and proposes electricity tariffs accounting for affordability constraints. The cash deficit of REG for both investment and operational purposes is provided through electricity sector subsidies by the Ministry of Finance and Economic Planning (MINECOFIN). Macroeconomic sector-level decisions require the approval of the Economic Cluster, which is a subgroup of the cabinet formed for the effective implementation and monitoring of the government's priorities.

7. **Over the past decade, Rwanda's electricity sector has emerged as a success story in Africa, with access to electricity rising from 6 percent in 2009 to an estimated 52 percent in June 2019.** 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.[3] Investments in grid extension have increased grid connections from 6 percent in 2009 to 38 percent at the end of June 2019. Off-grid access has more than doubled since 2016 and is estimated at 14 percent at the end of June 2019 (**Error! Reference source not found.**). This places the nationwide electrification rate at 52 percent. The grid coverage of public institutions is remarkably high, reaching, as of March 2019, 100 percent of hospitals, 93 percent of health centers (compared to only a third on

[2] Notably, 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).

[3] The World Bank, Tracking SDG7: The Energy Progress Report; http://trackingsdg7.esmap.org/data/files/download-documents/tracking_sdg7-the_energy_progress_report_full_report.pdf.

average in Sub-Saharan Africa), and 80 percent of primary and secondary schools (compared to a quarter for Sub-Saharan Africa on average). On the supply side, the generation capacity tripled from 76 MW in 2010 to 225 MW in June 2019 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 Bank's Regulatory 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.[4]

8. **The NST1 aims to make Rwanda the first country in Africa to achieve universal electrification and the first to achieve less than 50 percent reliance on traditional cooking fuels.** Achieving universal access to electricity and transitioning towards cleaner cooking options are important components of the Energy Sector Strategic Plan (ESSP; 2017–2024) which lays out the energy sector strategy for the National Strategy for Transformation. The NST1 identifies the importance of universal energy access for achieving the envisioned social transformation and aims at expanding electricity access to 100 percent of households by 2024 (48 percent off-grid and 52 percent grid connections; see **Error! Reference source not found.**).. NST1 envisages expansion of the energy sector based on least-cost principles and competitive procurement to provide quality, reliable, and affordable energy services to consumers. Furthermore, to improve the quality and reliability of electricity services, the ESSP sets out targets for reducing power interruptions and expanding electricity access to productive users. Recognizing the harmful health and economic impacts of using biomass in traditional cookstoves, the ESSP also aims to reduce the number of households using traditional cooking fuels from 79.9 percent in 2016/17 to 66.6 percent by 2020/21 and 42 percent by 2024 by replacing wood and charcoal with clean cooking options. The GoR also intends to expand the reach of improved cooking solutions to 100 percent of the households by 2030. Additional supporting initiatives include the installation of 35,000 domestic biogas digesters and 15 institutional biogas digesters annually, and increasing average charcoal yields up to 50 percent by 2030. Plans for enhancing the use of LPG through tax reductions on importations are also underway.

9. **Rwanda's energy sector is well positioned for the push towards universal access to sustainable energy as a result of several waves of institutional reforms over the last decade, the most recent of which was supported by a programmatic Development Policy Operation (DPO) series.** In 2009, the Electricity Access Rollout Program (EARP) was set up under the energy sector wide approach (eSWAp) concept as the sole unit to coordinate and roll out the GoR's electricity access program. All donor funds related to electricity access expansion are being channeled through the EARP. The EARP's robust design and implementation has facilitated the recent success in electrification and is being highlighted as best practice globally by the World Bank's Independent Evaluations Group (IEG) (The World Bank & IEG, 2014). In 2014, the GoR separated the electric utility from the water utility and established REG as a commercial company, transforming the utility into a commercially operated, well-governed state-owned enterprise.[5] During 2017-19, the GoR fundamentally transformed the regulatory and policy framework of the sector, with support from a DPO series (three operations), to ensure the expansion of electricity services under the NST1 will remain fiscally sustainable. Key reforms included (i) tariff and connection pricing reforms; (ii) multi-year fiscal planning for the energy sector; (iii) institutionalization of least cost planning for generation and transmission investments; (iv) a new legal and regulatory framework for PPPs in the energy sector;

[4] Developed by the World Bank Group, RISE is a tool for policy makers to compare national policy frameworks for sustainable energy and identify opportunities to attract investment. RISE assesses countries' policy support for each of the three pillars of sustainable energy—access to modern energy, energy efficiency, and renewable energy. See http://rise.worldbank.org/.

[5] While the Government retains ownership of the utility holding company, its affiliated companies are governed under company law as opposed to public service law, which entails stricter requirements in terms of transparency and management accountability.

(v) institutionalization of least-cost, geospatial electrification planning; (vi) a new framework of regulations and investment procedures for off-grid solar and mini-grids.

10. **The Government also plans to partner with the private sector and facilitate a competition-based development of markets for clean cooking products and technologies.** In October 2019, MININFRA published *Biomass Energy Strategy: A Sustainable Path to Clean Cooking 2019-2030,* which outlined key approach and programs to achieve the target of reducing the percentage of households that use inefficient cooking solutions from the baseline value of 79.9 percent in 2017 to 42 percent by 2024. The driving principles of the Strategy include: (i) The Government will set minimum performance requirements so that existing players and new entrants will be pushed to innovate; (ii) The Government will take a value chain approach to the mainstreaming of cleaner solutions to cooking needs, including production, infrastructure, storage and logistics; (iii) The financing and implementation of this Strategy will be undertaken in partnership with the private sector, to drive down costs and widen options for the consumers; (iv) Education and awareness campaigns, as well as research and development efforts, will be prioritized in the allocation of Government funds; and (v) the Government resources directly supporting dissemination of technology will be used in a targeted fashion, as a last resort to allow the poorest households to access the most appropriate technology while minimizing distortion of the market.

Relationship to CPF

11. **The development objectives of the proposed project are aligned with the higher-level goals for Rwanda set in the Systematic Country Diagnostic (June 2019),[6] the reform priorities for high growth identified in the joint study of the World Bank and the GoR: Future Drivers of Growth in Rwanda,[7] and the World Bank's Africa Energy Strategy.** Among the higher level goals identified in the World Bank's Systematic Country Diagnostic for Rwanda, published in June 2019, are the following that are supported by the design of the project: continued market and private sector development (by promoting private sector involvement in electrification and clean cooking options); and more sustainable and balanced approach towards investment (by supporting sector expansion through the least cost methods defined in the NEP and use of competitive procurement procedures, and leveraging private investment through strategic use of concessional financing). The project also supports two of the six reform priorities identified under the joint World Bank and GoR initiative on Future Drivers of Growth in Rwanda: enabling the emergence of competitive domestic enterprises (by targeting productive users for electrification and by promoting the participation of private sector firms in expanding electricity access and clean cooking); and developing capable and accountable institutions of governance (by providing technical assistance and building capacity of relevant public agencies and institutions working on the energy sector). Lastly, the program is aligned with the Africa Energy Strategy of the World Bank where achieving universal energy access is a core aspirational pillar.

12. **The investments proposed under this project will boost Rwanda's priority mitigation actions under its NDC.** Off-grid solar power and clean cooking are core objectives of Rwanda's NDC, which lays out a vision of greening the energy sector through mitigation actions on renewable energy and energy efficiency. The NDC defines Rwanda's contribution as emission reductions compared to a counterfactual, business-as-usual scenario. In the energy sector, the NDC prioritizes (a) increasing the share of new grid-connected renewable capacity compared to fossil fuels, (b) installing solar photovoltaic (PV) mini-grids in rural communities, (c) increasing energy efficiency

[6] World Bank. 2019. Rwanda - Systematic Country Diagnostic (English). Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/219651563298568286/Rwanda-Systematic-Country-Diagnostic
[7] Future Drivers of Growth in Rwanda: Innovation, Integration, Agglomeration, and Competition; https://www.worldbank.org/en/results/2019/05/10/future-drivers-of-growth-in-rwanda

through demand-side measures and supply-side loss reduction measures, and (d) promote environmentally sustainable use of biomass fuels.

13. **The project would continue the World Bank's long-standing partnership with the GoR in the energy sector.** Through several operations, the World Bank has supported the Government in sector reforms[8], expanding access[9] and generation capacity,[10] restructuring Rwanda's electric utility and improving its efficiency[11], asset and liability evaluation, sector capacity needs assessments, energy sector agencies' capacity strengthening, and comprehensive assessment of financial viability of the energy sector. The World Bank has also served as co-chair of the energy SWG designed as a platform to discuss challenges and opportunities as well as promote a coordinated approach of donor partners and energy sector stakeholders towards a coherent sector agenda.

[8] Energy Sector Development Policy Operation (DPO) series (US$375 million; FY2018-20; P162607, P166458, P169040).
[9] Rwanda EASSDP (P111567, 2009 and 2013; US$130 million); RESSP (P150634, 2015; US$45 million for access); and Scaling-up Renewable Energy Program-financed Rwanda Renewable Energy Fund (P160691, 2017; US$50 million for off-grid access).
[10] AFR RI-Regional Rusumo Falls Hydroelectric Project (P075941, 2013; US$340 million).
[11] RESSP (P150634, 2015; US$50 million for utility reforms).

C. Proposed Development Objective(s)

14. Improve access to energy and efficiency of energy service delivery to households, businesses and public institutions in Rwanda.

Key Results

15. **PDO Level Indicators**:

a) Grid Electricity access increased from 38 percent in 2019 to 52 percent in 2024;

b) Number of households provided with off-grid solar home systems: 500,000;

c) Number of households provided with clean cookstoves: 100,000;

d) Number of public institutions (schools and health centers) connected to the grid: [tbc]

16. **Project beneficiaries.** The ultimate project beneficiaries will be households, businesses, and public institutions in Rwanda through the following channels: (a) a portion of the currently unelectrified households will get electricity connections (on-grid or off-grid); (b) the quality and reliability of electricity services will improve, enabling households and businesses to make better and productive use of electricity; (c) households using biomass for cooking are expected to get health and economic benefits by switching to cleaner cooking options; and (d) a portion of currently unelectrified public institutions in Rwanda, including schools and health centers (all hospitals in Rwanda are electrified), will get electrified. Furthermore, by supporting electrification through solar off-grid solutions the project will help reduce greenhouse gas emissions if equivalent electricity were sourced from fossil fuel-based utility-scale power plants or emergency diesel power plants. REG will be a direct beneficiary of the project as it is expected to benefit from higher cost-recovery through improved operational efficiency (lower technical and commercial losses), and potentially higher revenues through increased electrification rate and improved quality of service. Finally, the GoR will benefit as improved cost-recovery for REG will ease the burden of fiscal transfers to REG, helping GoR to target other priority sectors, and a higher electrification rate and improved electricity services will help achieve the NST1 targets and consequently aid in economic growth.

D. Concept Description

17. **The proposed project would provide IDA financing under an Investment Project Financing (IPF) instrument, building on reforms supported during IDA18 and scaling-up investments supported in IDA16 and IDA17.** The instrument choice reflects a transition in focus from policy and institutional reforms, supported by the Rwanda Energy Sector DPO series (US$ 375m; FY2017-19), to scaling up public and private investment to implement the policy framework. The IPF will scale-up the World Bank's prior support to the GoR through Rwanda - Electricity Access Scale-Up and Sector Wide Approach Development Project (EASSDP; P111567, 2009 and 2013; US$130 million), the Rwanda Energy Sector Strengthening Project (RESSP; P150634, 2015; US$45 million for access), and the Rwanda Renewable Energy Fund (REF; P160699).

18. **The total IDA investment would be US$150 million, spread across four components of grid electrification, improving grid reliability and efficiency, advancing off-grid energy and clean cooking, and providing technical assistance, capacity building and implementation support.** The project components are aligned with the GoR's priority areas for public investment during the NST1 period. The design of the different component will be reviewed together with the authorities during preparation, with a view to (i) ensure complementarity with existing interventions by the World Bank and other development partners in the off-grid and clean cooking sectors (e.g., the World Bank's Renewable Energy Fund and the Improved Cookstoves Project); and (ii) keep the design of the overall project simple and implementable.

19. **The grid-related and TA components will be implemented by the EARP PIU in EDCL, which has demonstrated its effectiveness under the EASSDP project (IDA16).** The PIU will be strengthened appropriately by recruiting critical staff specifically to support effective implementation of the project. Staff requirements will be determined during preparation.

20. **The off-grid and clean cooking components will be implemented either by EARP or by the Renewable Energy Fund (REF) PIU in the Development Bank of Rwanda (BRD).** The final decision will be made depending on developments in the REF project, where a pilot RBF is currently under discussion as part of a potential restructuring. Should this restructuring take place, the off-grid energy and clean cooking component would either be presented to the Board under this project but integrated with the implementation arrangements of the REF or prepared as additional financing of the REF project. This decision will also depend on co-financing and parallel financing arrangements which will be finalized during preparation.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

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