



# Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

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Concept Stage | Date Prepared/Updated: 14-Feb-2017 | Report No: PIDISDSC18937

**BASIC INFORMATION****A. Basic Project Data**

Country Rwanda	Project ID P160699	Parent Project ID (if any)	Project Name Rwanda Renewable Energy Fund (P160699)
Region AFRICA	Estimated Appraisal Date Mar 20, 2017	Estimated Board Date May 31, 2017	Practice Area (Lead) Energy & Extractives
Lending Instrument Investment Project Financing	Borrower(s) MINECOFIN	Implementing Agency Development Bank of Rwanda (BRD)	

**Financing (in USD Million)**

Financing Source	Amount
Strategic Climate Fund Credit	27.50
Strategic Climate Fund Grant	21.44
IDA Grant	0.00
<b>Total Project Cost</b>	<b>48.94</b>

Environmental Assessment Category  
F-Financial Intermediary Assessment

Concept Review Decision  
Track II-The review did authorize the preparation to continue

Other Decision (as needed)

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**B. Introduction and Context****Country Context**

1. **Rwanda has one of the fastest growing economies in Africa, with GDP growth averaging 5.75 percent in the period 2000-2015.** Rwanda is a small landlocked country in East Africa, bordered by Democratic Republic of Congo, Tanzania, Uganda, and Burundi. Rwanda's population is 10.5 million, of which 52 percent are women. It has also one of the highest population density in Africa at an estimated 459 people per km<sup>2</sup>. Rwanda has maintained political stability since the genocide and civil in the early 1990s. Subsistence farming dominates Rwanda's economy, employing 90 percent of people and contributing over 30 percent of GDP. The services sector contributes over 50 percent of GDP. The share of the population living below the national poverty line has been falling from 57 percent in 2005 to 45 percent in 2011.

2. **Rwanda's long-term development vision is captured in the Country's Vision 2020 that seek to transform Rwanda**



**from a low-income agriculture-based economy to a knowledge- based, service-oriented economy.** The Vision 2020 translated to strategic development plans in the country's Poverty Reduction Strategic Plan (PRSP) and Economic Development and Poverty Reduction Strategy (first and second EDPRS). The Cabinet recently approved revised Vision 2020 targets, and second EDPRS targets are aligned to these. The medium-term goals are set out in the second EDPRS, whose main objective is to place Rwanda on a higher growth trajectory to ensure that the country achieves middle-income status by 2020. The second EDPRS is shaping policy in the forecast period (2013-2018), and aims to achieve an annual average economic growth rate of 11.5 percent and reduce poverty levels to less than 30 percent. The strategy entrusts a primary role for the private sector during this period, serving as the engine of economic growth and poverty reduction.

**3. Rwanda identifies energy as an essential condition for sustainable growth and development.** Government of Rwanda (GoR) recognizes the importance to provide "appropriate, reliable, and affordable energy supplies for all Rwandans" if the country is set to achieve middle-income country status by 2020. In view of this, half of the thematic areas identified to achieve the goals of the second EDPRS – economic transformation and rural development – are intended to address the primary constraints to scaling-up investment flows: access, reliability, and cost of energy.

## Sectoral and Institutional Context

### B.1 Sectoral Context

**1. Despite large strides already achieved, Rwandan electricity sector still faces significant challenges.** Access to electricity, limited generation capacity, high cost of electricity, and low efficiency of electricity supply are primary constraints to attract and further scale-up investment flows.

**a. Access to electricity** — Despite the fact that the total number of electricity customers has risen from about 6 percent in early 2009, to 24 percent by mid-2016, the electrification rate reflects primarily grid-connected users in urban areas and remains largely concentrated in the top quintile, with almost negligible coverage in the bottom 40 percent of the population. There is no reliable information for off-grid access rates; it is usually referred to as reaching 1 percent of the households.

**b. Low efficiency of electricity supply** — One fifth of the electricity generated is lost in the system either as technical or commercial losses.<sup>1</sup> Some equipment is dilapidated and poses operational challenges for operations staff, whereas other equipment does not have features to enable remote monitoring and control. Investments in transmission and distribution infrastructure of about US\$1.2 billion are needed in the next three years to improve reliability of supply.

**c. Limited generation capacity** — Rwanda's installed capacity as of June 2016 was about 185 MW. GoR plans to expand the country's generation capacity to about 563 MW by 2018, which requires an annual investment of

<sup>1</sup> Rwanda Electricity Grid Audit, 2013.



approximately US\$167 million. To increase the country's total installed generation capacity, GoR is making efforts to tap into methane, peat, hydro, and solar to secure a more balanced energy mix and lower the cost of supply. GoR is also in discussions with Kenya, Uganda, and Ethiopia on power imports.

**d. High electricity costs** — Rwanda is particularly hit by high cost of service delivery at about US\$0.32 per kWh. The current electricity mix is about 52/48 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. Electricity tariffs are relatively high compared to other countries in the region — US\$0.22 per kWh — and are not cost reflective. Additionally, the average cost of grid connection is heavily subsidized: out of about US\$560 connection cost per household, consumers pay about US\$75 connection fee over a 2-year period. The Least Cost Power Development Plan (LCPDP) prepared for the electricity sector is expected to put in place prioritized investments needed to develop the sector from generation through transmission to distribution. GoR has also adopted a Financial Recovery Plan (FRP) that highlights the revenue requirements of the sector and is aimed at ensuring the availability of adequate resources needed for the priority generation investments outlined in the LCPDP.

2. **GoR has an ambitious target to increase access to electricity to 70 percent by 2018, including 22 percent through off-grid solutions.**<sup>2</sup> High cost of reaching rural households through grid, together with low residential electricity consumption levels, have affected financial sustainability of grid-extension investments. Roughly half of residential consumers are using less than 20kWh per month. In view of this, GoR is promoting off-grid access to electricity, where extending the grid is not financially viable, especially for light electricity users. Reaching off-grid energy access target by 2018 will require unleashing significant private sector investments in off-grid and mini-grid solutions.

3. **The recently-approved Rural Electrification Strategy aims at facilitating private sector investment in off-grid and mini-grid solutions for rural electrification.** The objective of the strategy is to “encourage households to access the most appropriate form of electricity based on their income levels and usage patterns, and ensure that as households’ energy needs increase in line with economic growth they are able to access technologies aligned with these increased needs.” The strategy aims to achieve its objective through four programs, namely: (i) continued roll-out the electricity grid through Electricity Access Roll-out Program (EARP); (ii) mechanism to allow low-income households to access modern energy services through a basic solar system as a basic necessity; (iii) risk-mitigation facility targeting the private sector to allow solar products be made available on financial terms that the population can afford; and (iii) development of mini-grids by the private sector with GoR playing a key role in identifying sites and establishing the enabling environment conducive for such investments.

## B.2. Institutional context

4. **Rwanda's electricity sector has undergone several reforms since 1990s aiming at achieving long-term**

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<sup>2</sup> The Rwanda's Energy Sector Strategic Plan also targets that 100 percent of schools and hospitals will have access to electricity by 2018.



**sustainability, financial credibility, and increased private sector engagement.** The institutional structure of the electricity sector involves three key institutions: (a) Ministry of Infrastructure (MININFRA), who sets the policy and strategy for the sector; (b) Rwanda Utilities Regulatory Authority (RURA), who regulates the sector, approves electricity tariffs, etc.; and (c) Rwanda Energy Group (REG) with its two subsidiaries – Energy Development Corporation Limited (EDCL) and Energy Utility Corporation Limited (EUCL), who are responsible for new energy development activities and electricity utility operations. The Rwanda Energy Policy (REP) sets out the overall vision and policy framework, whilst the Energy Sector Strategic Plan (ESSP) translates the policy directives and principles into concrete measures necessary to reach medium-term targets.

5. **Rwanda has established an encouraging legal and regulatory framework for off-grid electrification.** For mini-grids, RURA developed a simplified licensing framework for mini-grids, which streamlines the licensing and permitting process, presents options to mini-grid companies when the national grid arrives, and lays out the principles for setting cost-reflective tariffs. This regulation applies primarily to mini-grids with installed capacity between 50kW and 1MW, as systems below 50kW are exempted from licensing. Since the mini-grid sector is nascent in Rwanda, and all mini-grids operating in the country are exempted from licensing, there is no single mini-grid project that could be taken as sample to corroborate the existing legal and regulatory framework when it comes to setting tariffs or interconnecting to the national grid. As a result, mini-grid companies remain concerned about the workability of the existing framework, especially when it comes to setting cost-reflective tariffs and negotiating the interconnection to the national grid with EDCL/EUCL. For standalone solar systems, the legal and regulatory arrangements do not represent a major barrier to market growth. More broadly, the sector needs clear specification of equipment quality consistent with internationally agreed standards (e.g., Lighting Global) and an effective mechanism to enforce these standards.

6. **In November 2015, the Scaling-up Renewable Energy Program (SREP)<sup>3</sup> approved the Rwanda Investment Plan (IP) with an allocation of US\$50 million to reduce barriers and accelerate growth in off-grid electricity access using standalone solar systems and renewable energy-based mini-grids.** Reaching energy access targets of 70 percent by 2018 will require substantial private sector investments in off-grid solutions and mini-grids. GoR plans to use SREP funds to support implementation of the Rural Electrification Strategy, particularly to catalyze private sector investments in off-grid renewable energy access through supporting programs (iii) and (iv) envisioned in the aforementioned Strategy. The World Bank is the leading institution in managing SREP funds in Rwanda.

7. **The proposed SREP-financed project will support the implementation of the Rural Electrification Strategy.** It will aim to catalyze private sector investments in off-grid renewable energy access by addressing main constraints that face private companies in the off-grid market, especially for standalone solar systems and renewable energy mini-grids. GoR envisions the proposed project as a pilot that could be scaled-up into a primary mechanism for directing funds and technical assistance to the off-grid electricity sector, eventually attracting additional financing from other development partners and private sector into rural electrification.

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<sup>3</sup> The Scaling-up Renewable Energy Program (SREP) is a multi-donor trust fund under the framework of the Climate Investment Funds (CIFs).



## Relationship to CPF

8. **The proposed project is fully aligned with the World Bank Group Country Partnership Strategy for Rwanda (CPS) FY2014-2018.** Increased energy access in Rwanda through greater private sector participation will foster economic growth and directly support CPS's objective identified under the first theme, which calls for "accelerating economic growth that is private sector driven" and places energy investments as high priority to tackle high costs and low reliability of energy. The provision of electricity for productive uses will contribute to the objective of the second theme, which is "improving the productivity and incomes of the poor through rural development and social protection." The proposed project will provide electricity access to the rural hard-to-reach households who are predominantly poor, thereby enhancing their ability to participate and contribute to the economic development of Rwanda.

## C. Proposed Development Objective(s)

The Project Development Objective is to increase electricity access in Rwanda through off-grid technologies and facilitate private-sector participation in renewable off-grid electrification.

### Key Results (From PCN)

8. The objective will be achieved through assisting GoR in establishing a Renewable Energy Fund (REF), which will help overcome financial barriers and accelerate growth of the off-grid electrification market in Rwanda. Off-grid electricity services supported by the proposed project will comprise a variety of technologies and business models, including standalone solar systems and renewable energy-based mini-grids.
9. Key results expected and associated indicators are as follows:
  - People provided with access to electricity by household connections using standalone solar PV systems (of which percentage of women) (number);
  - People provided with access to electricity by household connections using mini-grid systems (of which percentage of women) (number);
  - Formal and informal enterprises provided with access to electricity (of which percentage of female-led enterprises) (number)
  - Annual electricity output from renewable energy (MWh/yr)

## D. Concept Description

1. The proposed project will be designed to facilitate private sector participation in off-grid electrification through a financial intermediary facility. The facility will address financial barriers to private sector entry, as well as help improve the investment environment for private sector participation in off-grid electricity services.



2. The proposed facility will be a pilot that would eventually be scaled-up to a Rural Electrification Fund. GoR plans to establish the Rural Electrification Fund as the main channel to direct funds and technical assistance to the off-grid market. REF is envisioned to be one of the many “windows” of the overarching Energy Development Fund, which is also envisioned in the Rural Electrification Strategy and will be established to support coherent development of the energy sector in Rwanda. The Rural Electrification Fund will become a platform for the harmonization of development partners’ support for renewable, off-grid electrification markets, thus streamlining interventions and improving complementarities.
3. The proposed facility will be administered by an existing public financial institution in Rwanda. The candidate institutions include the Rwanda Environment and Climate Change Fund (FONERWA), the Development Bank of Rwanda (BRD), and the Business Development Fund (BDF). Using an existing institution to house the facility will ensure that existing capacity in the financial sector is utilized to operationalize the facility in a timely and efficient manner while building institutional and technical capacity of the selected institution to facilitate lending to the off-grid energy sector. The institutional capacity assessment of the potential hosts is currently underway and will inform the decision of GoR on the implementing agency.
4. The proposed facility will promote private sector investments in a variety of renewable energy technologies and provide technical assistance for enhancing the enabling environment for private investments in off-grid energy markets. Based on preliminary consultations with energy sector stakeholders, it is expected that the facility will mainly support financing of standalone solar systems suppliers and mini-grids developers. The facility design will be sufficiently flexible to adapt its scope based on future strategic needs and priorities of the market.
5. Further detailed assessment of market needs and institutional capacities will inform the final design of the facility, including the choice of instruments. Planned work includes, among others, a comprehensive analysis of the off-grid solar systems and mini-grids markets, including financial sector supply-side barriers. At this stage, a range of facility design options are being considered and analyzed, including direct provision of debt and equity to energy companies, credit lines to local commercial banks and credit enhancement facilities to local commercial banks.
6. Whether the facility will be ‘wholesale’ or ‘direct’ in nature will be determined during project preparation. While a wholesale facility would provide financing or guarantees to commercial banks to facilitate their financing of private companies in the off-grid sector, direct financing/ guarantees would involve a direct engagement of one of the three hosts with these companies. The nature of the off-grid market, the institutional capacity of the hosts and the interest of commercial banks to engage in this sector will influence the final decision. The advantage of a wholesale facility would be that it would utilize the risk management capacity of the commercial banking sector and encourage banks to increase lending to the off-grid market once the profitability of such investments has been established. This would positively influence the sustainability of the project.
7. The proposed project will be structured around two main components: (1) Renewable Energy Fund (REF); and



(2) Project implementation support.

*Component 1: Renewable Energy Fund (REF) (estimated cost US\$46.94 million)*

8. This component will support setting up a facility that will promote financing to private sector investors in off-grid electrification, as well as deliver technical assistance. It is envisaged that this component will support the following two main areas:

9. *Sub-component 1-A: Access to Finance for Off-Grid Solar and Mini-grids.* This sub-component will support commercially-oriented companies selling off-grid solar energy systems, as well as mini-grid companies by facilitating their access to financing.

10. Many companies in the off-grid solar industry are startup ventures, characterized by rapid growth, short funding cycles and reinvestment of proceeds in order to facilitate their growth. This leaves most firms cash-strapped and, if successful, in regular need of additional financing. Manufacturing companies need capital for research and development; and to offer attractive terms to distributors to import products. Distributors and retailers need capital to finance the product costs, as well as their distribution systems to deliver products to end-consumers. Increasingly popular business models such as pay-as-you-go require upfront expenditure on solar equipment which is recouped over time in installments from customers, further constraining liquidity of fast-growing companies. Mini-grids developers usually require grant- and highly concessional financing to improve the affordability of electricity connections and consumption by mini-grid customers. It is crucial to leverage private sector financing and capabilities in order to demonstrate the potential for financially sustainable and scalable mini-grid business models.

11. The proposed facility is expected to support the provision of access to finance to (i) companies that manufacture and/ or sell quality-certified solar systems in Rwanda at terms that companies can afford at, while accelerating “connections” to solar electricity; and (ii) private sector mini-grid companies at terms that reflect the societal benefits (externalities) from mini-grid development, but do not result in undue financial market distortions. Different financing instruments are being considered, including working capital loans, partial risk guarantees, partial grant financing, and foreign exchange exposure protection.

12. Being a pilot, the facility is not expected to offer more than two instruments. The final package of financing instruments, the associated terms, as well as the detailed design of the facility, including the decision of whether the facility will be wholesale or direct, will be developed during project preparation with the assistance of a highly qualified consultancy.





13. The eligibility criteria for sub-projects will be defined during project preparation. Different types of off-grid business models will be considered based on the merits of each individual sub-project and its alignment with the overall objectives of the project. The main focus will be on geographical areas which are not covered by grid expansions plans and/or are located furthest away from the grid. The supported off-grid solar companies will be required to supply quality-certified solar systems; the supported mini-grids are expected to serve a combination of productive and household loads, to take advantage of economies of scale associated with electricity generation costs, particularly for hydro-based power. The selection of mini-grids sub-projects will be technology-neutral to allow for various competing technologies for electricity generation, including micro-hydro, solar, and potentially wind energy sources. Hybrid systems, including diesel back-up, will also be eligible for support, under the condition that the diesel component must be financed from sources other than SREP.

14. *Sub-component 1-B: Technical Assistance and Enabling Environment.* This sub-component will provide technical assistance and enabling environment support in different areas. The following activities could be supported by the sub-component: (i) market development support (e.g., consumer awareness activities; market intelligence tools such as national off-grid databases, etc.); (ii) mini-grid project pipeline development (e.g., preparatory studies, technical support); (iii) promotion of productive uses for rural income generation (support for the development of different commercial and productive uses of electricity in agricultural irrigation, electrical tailoring, electrical milling, etc.); (iv) quality assurance (support in the adoption and enforcement of technical standards for mini- and standalone electricity systems); (v) enhancing legal and regulatory framework for off-grid, especially mini-grid, including developing standard legal agreements, etc.; (vi) monitoring and evaluation systems (estimate reliable baseline data for the off-grid electricity sub-sector, building on the ongoing efforts to develop the Multi-tier Framework); (vii) capacity building of the host institution of the REF to properly administer the facility; and (viii) capacity building of commercial banks (assistance to appropriately evaluate, process and manage requests for financing from solar companies and mini-grid companies, etc.).

15. The scope and design of this component will be finalized during project preparation. The team is exploring the opportunities of other donors supporting the technical assistance component in parallel.

*Component 2: Project Implementation Support (estimated cost US\$2 million)*

16. This component will include activities to support management and successful implementation of the project. Activities could include, inter alia, project management support, improving technical and procurement capacity of the project implementation unit, studies, audit, monitoring and evaluation, safeguards, etc.

17. The proposed budget of the project by component can be found below:



<b>Component</b>	<b>Amount</b> (US\$ million, estimated)
Component 1: Rural Electrification Fund	46.94
- Access to Finance for Off-Grid Solar and Mini-grids	46.44
- Technical Assistance	0.50
Component 2: Project Implementation Support	2.00

## B. Safeguards issues

18. The project will deliver positive environmental and social impacts since off-grid solar systems and mini-grids would replace lighting systems that are either fossil fuel-based such as diesel generators and kerosene lamps or woody biomass, which are detrimental to the biophysical environment. The project will install solar PV systems/panels on rooftops or mount them on poles. Lamps and other ancillary equipment will be used/deployed directly in homes without any construction. There will be no greenhouse gases (GHGs) or air pollutants emitted into the atmosphere during installation and operation of solar PV systems. Water use is limited to upstream manufacturing and will not be a problem during operation. There are practically no risks to landscapes and ecology during operation. On the social side, promoting solar PV systems and mini-grids will bring diverse social benefits, including provision of cheaper and cleaner source of energy for charging phones and other gadgets, electrifying public facilities (health centers, educational institutions, other public buildings, etc.), helping to create employment and village-level jobs/businesses, increasing shelf-life of pharmaceuticals and vaccines, improving socialization, etc.

## Environmental impacts

19. The main environmental, health and safety concerns are likely to be associated with recycle and disposal of spent batteries at the end of their useful lives, which is usually 3-5 years after deployment. Rechargeable batteries for storing solar energy may run on nickel-cadmium (Ni-Cad), nickel metal hydride (NiMH), lithium-ion (Li-ion), lead-acid (Pb-A) or lead-gel (Pb-gel). These batteries should not be disposed in standard landfills because they can create long lasting environmental and human health impacts (e.g., headaches, abdominal discomfort, seizures and comas, cancers, irritation of skin and respiratory system, burns and damage to skin and eyes, corrosion, etc.) due largely to the heavy metals such as mercury, lead, cadmium and nickel, and acids. The entire management processes including de-manufacturing, collection, storage, recycling, transport and disposal may present a challenge to this project, given the scope of this Bank operation. In view of anticipated challenges associated with recycling and disposal of spent batteries, the World Bank's Environmental Assessment operational policy (OP/BP 4.01) will be triggered and appropriate safeguard instruments prepared. Since, at this stage of project design, the specific types of subprojects and sites remain unidentified, the recommended safeguard instrument will be an Environmental and Social Safeguard Framework (ESMF). Given that the Project (see Component 1A) intends to provide loans to off-grid solar



and mini-grid developers by establishing a facility that is likely to be run and overseen by financial intermediaries, the Environmental Category assigned this Project is Category FI. Under Component 1B one of the proposed activities would involve mini-grid project pipeline development (e.g., preparatory studies, technical support). While it is recognized that undertaking pipeline project development should not result in any environmental risk or social impact per se, the Project and the financial intermediaries, but also the off-grid solar and mini-grid developers, will prepare the appropriate site-specific safeguard instruments (e.g., ESIA/ESMP/RAP, etc.) once the specific locations and subprojects under Components 1A & 1B are determined. These documents will be consulted upon, cleared and disclosed in-country and at the World Bank's InfoShop.

20. The Project will work closely with the Rwanda Environmental Management Authority (REMA). Rwanda will develop a project-specific environmental code of practice (ECOP) as a guidance on approach for the collection, transport, storage and disposal of spent batteries, with the aim of ensuring that risks to the environment and human health are prevented or mitigated. Apart from providing approaches to the management of spent PV batteries, such an ECOP will also seek to inform discussion and build awareness of all stakeholders, including rural community members, vendors/suppliers of products and service providers, around safe management of used batteries.

#### Social impacts

21. Improved/increased access to electricity via solar PV systems and mini-grids will provide positive social impacts for currently underserved rural communities in Rwanda. Beneficiaries (peoples and public facilities) are located in off-grid areas often seen as economically not feasible or too dispersed and isolated to benefit from grid extension.

22. This Project will not result in massive land acquisition since the installation of systems will take place within existing households and public facilities. However, the installation/ construction of mini-grid systems may result in the acquisition of land. Thus, the Bank's operational policy on Involuntary Resettlement (OP/BP 4.12) is triggered; and a resettlement policy framework (RPF) will be prepared before appraisal. The project will be operating in areas where the overwhelming majority of the beneficiaries may be underserved, vulnerable and marginalized. The project will take steps to ensure that these groups of people are considered in the design and are favored during project implementation. Also, at the design stage, it is also critical that the Project undertakes consultations for broader stakeholder support, buy-in and gender-related considerations. The appropriate safeguard instruments, in accordance with World Bank safeguard requirements and the national environmental regulations, will be required to be prepared when subprojects and locations become known.

#### C. Preparation Funding



23. The GoR has requested US\$0.8 million grant from SREP to support project preparatory activities, including the two highly qualified consultancies that will help design the facility. As per GoR request, the Bank will execute this project preparation grant on behalf of GoR.

## **SAFEGUARDS**

### **A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)**

n/a

### **B. Borrower's Institutional Capacity for Safeguard Policies**

The implementing agency will be an existing public financial institution in Rwanda. The candidate institutions include the Rwanda Environment and Climate Change Fund (FONERWA), the Development Bank of Rwanda (BRD), and the Business Development Fund (BDF). The final decision regarding the implementing agency will be made during project preparation based on the institutions' capacity and comparative advantage in hosting the intended facility. None of the potential implementing agencies have previous experience of working with the Bank's safeguards policies. To ensure that the selected implementing agency has necessary safeguards capacity, and meets the Bank's requirements, safeguards assessment would need to be carried out of the selected implementing agency. It is planned that a Project Implementation Unit (PIU) will be established in a selected implementing agency; the PIU will include a safeguards specialist. Capacity building activities will be planned as determined by the safeguards assessment, including training of the staff, etc. Such capacity building would be financed from the project implementation component of the proposed project.

### **C. Environmental and Social Safeguards Specialists on the Team**

Gibwa A. Kajubi, Edward Felix Dwumfour

### **D. Policies that might apply**

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The Project will finance technologies for electricity generation, including micro-hydro, solar, hybrid systems including diesel back-up and potentially wind energy. Implementing these activities will result in environmental risks and social impacts, including anticipated challenges associated with recycling and disposal of spent batteries. Since the locations for sub-projects that may be funded are not yet known, the framework approach will be adopted and appropriate safeguard instruments such as ESMF and



		RPF will be prepared, consulted upon and disclosed in-country and at the Bank's InfoShop before appraisal.
Natural Habitats OP/BP 4.04	Yes	Civil works associated with the construction of hydro based mini-grid systems could result in adverse environmental impacts on sensitive and fragile ecological systems such as wetlands, groundwater aquifers, lakes, etc. The Project will endeavor to avoid supporting any subprojects likely to impact natural habitats. However, the expected impact would be very small. Micro/mini hydro mini-grids have a small land foot print and therefore there is likely to be little or no need for land acquisition. The checklist that would be prepared as part of the ESMF will spell out procedures for screening and vetting subprojects and ensuring that subprojects likely to cause irreparable loss to sensitive areas will not get funded.
Forests OP/BP 4.36	No	The Project will endeavor to avoid supporting any subprojects likely to impact adversely on forests. The checklist that would be prepared as part of the ESMF will spell out procedures for screening and vetting subprojects and ensuring that subprojects likely to cause irreparable loss to forests will not get funded.
Pest Management OP 4.09	No	
Physical Cultural Resources OP/BP 4.11	Yes	This is triggered on the assumption that civil works may affect physical cultural resources including "chance find".
Indigenous Peoples OP/BP 4.10	No	
Involuntary Resettlement OP/BP 4.12	Yes	The installation of mini-grid systems may result in the acquisition of land. Thus, a resettlement policy framework (RPF) will be prepared, consulted upon and disclosed in-country and at the Bank's InfoShop before appraisal. However, the expect impact would be very small. Micro/mini hydro mini-grids have a small land foot print and therefore there is likely to be little or no need for land acquisition.
Safety of Dams OP/BP 4.37	No	The micro-hydro minigrids are typically under 100 KW of capacity. They are "run-of-river" projects with weirs (not dams) of typically no more than 1.5 to 2 meters height to divert part of the water to the open canal. There is little or no impoundment behind weir.
Projects on International Waterways OP/BP 7.50	No	Subprojects that affect international waterways will not be eligible
Projects in Disputed Areas OP/BP 7.60	No	



## **E. Safeguard Preparation Plan**

Tentative target date for preparing the Appraisal Stage PID/ISDS

Oct 12, 2016

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

November-December, 2016

### **CONTACT POINT**

#### **World Bank**

Yadviga Viktorivna Semikolenova  
Senior Energy Economist

#### **Borrower/Client/Recipient**

MINECOFIN  
Ronald Nkusi  
Director - External Finance Unit  
ronald.nkuzi@minecofin.gov.rw

#### **Implementing Agencies**

Development Bank of Rwanda (BRD)  
Hector Mutijima  
Senior Manager, Energy  
brd@brd.rw

### **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>



## APPROVAL

Task Team Leader(s):	Yadviga Viktorivna Semikolenova
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## Approved By

Safeguards Advisor:	Nathalie S. Munzberg	14-Feb-2017
Practice Manager/Manager:	Lucio Monari	15-Feb-2017
Country Director:	Yasser Aabdel-Aleem Awny El-Gammal	19-Feb-2017