

# CLIMATE INVESTMENT FUNDS

November 9, 2015

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## **SREP INVESTMENT PLAN FOR RWANDA**

### **WORLD BANK RESPONSE TO COMMENTS FROM SWITZERLAND**

**Scaling-up Renewable Energy Program (SREP)**  
***SREP Investment Plan for Rwanda***  
**Responses to Comments from Switzerland**  
**November, 2015**

	<i>Comments</i>	<i>Response</i>
<b>Financing Plan</b>		
1	(Q) What is the requested grant vs non-grant split in the IP?	The distribution is as follows: US\$22.2 million grant (45%) and US\$27.5 million loan (55%) – see Appendix 6
2	(Q) Which MDB's support which sub-components with how much co-financing?	MDB co-financing will be provided to the Renewable Energy Fund (REF) Project, noting that the specific allocation to sub-components will depend on market demand. The MDB co-financing amounts indicated in the Financing Plan, as well as individual contribution from each WB and AfDB, are tentative and will be confirmed during project preparation.
3	(C/Q) It is noted that the SREP IP for Rwanda foresees to leverage \$2.66 for each \$1 of SREP funding. This is below the SREP target of 4.0. In particular the co-financing from MDBs seems to lack ambition. Why is this so?	<p>The SREP IP for Rwanda was designed to initiate the transformation of the country's off-grid electricity sub-sector by unlocking the enormous potential for private sector investment in off-grid electrification. The Rwanda IP intends to provide the adequate enabling conditions to leverage private investments in the off-grid sector, therefore shifting the development of the off-grid sector from a donor-dependent to a more systematic and sustainable approach based on private sector participation. The IP included very conservative numbers of co-financing and leverage ratio. However, since the Rwanda IP will allow for the establishment of off-grid markets (e.g., mini-grids, stand-alone solar PV), larger amounts of co-financing shall be expected in the medium term once these markets have been established. Moreover, the implementation of the Rwanda IP will provide electricity to approximately 15 percent of the population that is currently lacking access to electricity.</p> <p>Given that Rwanda has a limited available IDA envelope, which is almost fully earmarked, the size of the WB IDA financing to the project will depend on availability of limited IDA funds for Rwanda by the time of project preparation. However, the proposed REF project is only one part of the wide, comprehensive WB engagement in Rwanda: the WB supports (i) grid roll-out and strengthening in Rwanda through Rwanda Electricity Access Scale-up and Sector Wide Approach (SWAp) Development Project (US\$122 million) and recently negotiated Rwanda Electricity Sector Strengthening Project (US\$ 70 million for grid roll out</p>

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		and strengthening); (ii) capacity building of the utility through Rwanda Electricity Sector Strengthening Project (US\$ 20 million for capacity building); and (iii) increasing hydro generation in the country through financing a regional Rusumo Falls Hydroelectric Project (US\$350 million). The proposed REF project will support the development of off-grid markets, which complement the existing WB program in the country. In addition, it is expected that once established and operationalized, the REF will channel additional donor contributions difficult to estimate at this point.
4	(C/Q) Given that the mini-grid component may be assimilated to community development, it would be expected that the GoR supports this with co-financing. Why is the GoR not co-financing the mini-grids?	GoR support is allocated to the provision of energy for social infrastructure (schools, health clinics etc.). These could be either stand-alone or mini-grids, though for the purposes of costing the plan, they were assumed to be stand-alone. The focus of the REF is to stimulate private sector investments, where possible without subsidies. For mini-grids, there may be a need to subsidize the distribution grid component of the investment, and this is expected to be in line with current financing of grid extensions which are largely externally financed by MDBs and donors.
<b>Results framework</b>		
5	(Q) For which years are the baseline and target figures?	Baseline is expected value for 2015. Target year is 2020. Note that renewable energy outputs shown in the results framework at the SREP transformative level relate to the on-grid generation. Off-grid generation is currently not well monitored, but is thought to be at a low level. The increase in renewable energy generation resulting from SREP relates to the off-grid generation component, and does not include other on-grid renewables investments that will be taking place outside of the SREP program over the period to 2020.
6	(C/Q) The SREP program outcomes include a direct increase of annual electricity output from renewable sources of 42 GWh. Why is the annual offset of fossil fuel generated electricity thereby only 22 GWh?	It was conservatively assumed that provision of off-grid electricity (42 GWh) would displace the need for on-grid electricity that is partly based on renewable energy (~20 GWh) and partly on fossil fuel (~22 GWh).
	(Q) If the average emission factor on the grid is 0.5 and the annual offset of fossil fuel electricity is 22'000 MWh, how is the annual offset of CO <sub>2</sub> emissions of 20'000 tons justified?	The grid emission factor of 0.5 tCO <sub>2</sub> /MWh is based on renewable and fossil-fueled power generation. The 20ktCO <sub>2</sub> emissions avoided were estimated using a higher emission factor (0.91 tCO <sub>2</sub> /MWh) for fossil-based power generation.

	<i>Comments</i>	<i>Response</i>
<b>Stand-alone solar systems</b>		
7	(Q) Who are the recipients of SREP funds? Consumers? Businesses? Developers? RE entrepreneurs?	It is expected that the main recipients would be businesses requiring working capital. There is also provision for funds to be provided to consumers via consumer finance vehicles such as micro-finance organizations or credit cooperatives. Other support mechanism can include start-up grants and feasibility studies for entrepreneurs and project developers.
8	(Q) How will stand-alone solar PV systems increase the productive use of electricity?	Stand-alone systems can be sized for small productive users (e.g., lighting for studying, small businesses requiring small loads). However, the productive use element of the program is expected to be a greater focus of the mini-grids component.
9	(C) In order for the program to be sustainable, stand-alone solar systems should be provided to customers as a package including maintenance support at an affordable price (not free). A good way to provide this is the use of RE entrepreneurs or NGOs taking care of solar system installation and maintenance paid by monthly installments from beneficiaries and pre-financed by micro-credits in the name of the beneficiaries. Successful examples exist in various African countries.	Agreed. This is expected to be a significant component of the program.
<b>Mini-grids</b>		
10	(Q) Will the mini-grids be powered exclusively by solar PV or are other RE sources (e.g. mini/micro hydro or biomass) foreseen/possible?	The REF will take a technology agnostic approach, therefore mini/micro hydro and biomass will be eligible under the program. There is significant potential in Rwanda for micro-hydro to be the energy source. Hybrid systems are also provided for, although it is clear that only the renewable energy component could be financed by SREP.
<b>Enabling environment</b>		
11	(C) At the project stage a more detailed description of capacity building and TA	Agreed.

	<i>Comments</i>	<i>Response</i>
	activities targeted at improving the enabling environment must be provided.	