

Rwanda – Energy mix recommendation

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Energy consumption in Rwanda is dominated by biomass, which accounts for 85% of the total energy consumed. A large majority of the energy that is produced from biomass is utilized by households. This is mainly because Rwanda is still a developing country and is yet to establish enough financial stability that will allow for greater energy consumption in other sectors.

This project discusses three potential sources of renewable energy in Rwanda: Hydropower, Geothermal and Solar. The feasibility and implementation of each of these resources is explored, which leads to a recommendation for improving the energy situation in Rwanda.

The total existing hydropower installed capacity is about 64.5 KW although domestic and medium size hydropower is estimated to have a potential of about 117 KW. However, a lot of investment is needed which might hamper fast development of hydro potential even though it still remains one of the least cost generation sources. Rwanda also lies in an area known as the “ring of fire” as it has the potential to supply geothermal base load energy due to active geothermal sites. If a suitable geothermal resource is identified in the remaining regions, then framework for geothermal exploration, identification of partners and investors, power plant development and capacity building of Rwandan experts should become top priority. The group suggests employing micro-grids and direct application of geothermal heat in industrial uses as it has higher energy efficiency, about 50% more than conversion in electric power. The final proposal thus recommends building a mix of sustainable and low-cost energy sources, close to demand centers and connected by micro-grids.

