

CAN KENYA SUPPLY ENERGY WITH 100% RENEWABLE SOURCES?

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Abstract — Energy demand is rising rapidly in Kenya as a result of rapid population and economic growth. The energy sector faces frequent power outages, low access in rural areas and over-reliance on imported fossil fuels for power generation. The current energy policy emphasizes fossil fuels, but Kenya's Vision 2030 aims to enhance renewable energy generation and supply. Thus, the Kenya National Climate Change Action calls for investment in a low carbon climate resilient pathway. Here the question is: does Kenya have necessary technologies and resources to supply 100% renewable energy? We explore this potential by analyzing the current energy mix situation. We then look at current and projected demand. We found that the country has enough potential technologies and resources to meet its current and future power demands with renewable sources. Kenya is endowed with hydro, geothermal, wind, solar and biomass sources. Geothermal, hydro and wind resources in Kenya are estimated to contribute up to 10,000 MW, 4,750 MW and 30,000 MW respectively. The promotion and adoption of renewable energy can expedite the government's action plan of providing universal access to electric power by 2020. In so doing, the country can lead African countries in green energy policies.

Keywords—renewable energy; Kenya; energy policy; energy demand; energy potential