

# Kenya



## THE SITUATION

Kenya's energy sector faces daunting challenges, characterized by high cost and insufficient supply. With nearly 80% of Kenyans living without access to basic energy services, a top priority for the government is to improve access to adequate and affordable energy supply. Existing energy supply is heavily and unsustainably dependent upon hydroelectric power, and rapid energy demand growth means that Kenya must find new ways to provide crucial energy services to its people. Renewable energy resources offer one option for helping Kenya to meet its energy challenges. The country possesses bountiful wind, solar, small hydro, biomass, and geothermal potential. For example, Kenya has nearly 7,000 MW geothermal potential, enough power to meet around three times Kenya's annual energy use. Yet these resources remain largely undeveloped. Key barriers inhibiting the expansion of Kenya's renewable energy sector include economic and

financial limitations, insufficient technical and human capacity, and various social constraints. Only about 200 MW of Kenya's geothermal potential is currently exploited. Lacking access to affordable energy bears negative implications for poor households and for women in particular, leading to adverse economic, health, and education outcomes.

## THE TRANSFORMATION

Kenya is tapping US\$50 million in highly concessional financing from the Scaling Up Renewable Energy Program in Low Income Countries (SREP) to support a portfolio of investments designed to catalyze the country's renewable energy sector. SREP financing will enable the scaled-up development of Kenya's renewable energy potential by assuming high up front project development risks, thereby addressing key barriers to investment and catalyzing additional financial resources. Kenya's SREP investment plan was designed to align with the country's national renewable energy development strategy under the leadership of the government in coordination with the African Development Bank (AfDB), World Bank (IBRD), other development partners, and key Kenyan stakeholders. SREP financing is expected to leverage over US\$530 million in additional co-financing and aims to maximize co-benefits to local communities and to generate and capture valuable lessons for accelerating the development of renewable energy sectors in other low-income countries around the world.



Source: elFrank70 – Flickr.

## KENYA QUICK FACTS

GDP (2011):	<b>US\$33.6 billion</b>
Annual GDP growth rate (2011):	<b>4.5%</b>
Population (2011):	<b>41.6 million</b>
Population without energy access:	<b>77%</b>
2022; 2030 national rural electrification target:	<b>65%; 100%</b>
Installed geothermal capacity:	<b>200 MW</b>
National geothermal potential:	<b>7,000 MW</b>
2030 national geothermal development target:	<b>5,110 MW</b>

## KENYA SREP QUICK FACTS

SREP financing:	<b>US\$50 million</b>
Expected to leverage:	<b>US\$536 million</b>

## EXPECTED SREP IMPACT: Developing local capacity in the renewable energy sector

In addition to improving access to high quality and affordable energy services through investments in Kenya's renewable energy resources, Kenya's SREP investment plan aims to develop local capacity for accelerating the country's shift to a low carbon development pathway. Overall, the capacity building component of Kenya's SREP investment plan is designed to increase public and private participation in the renewable energy sector. Doing so will strengthen local governance and institutional capacity for replication and scale-up of successful approaches. Furthermore, by ensuring an effective knowledge management process, SREP financing can enhance the enabling environment for renewable energy production and use within the country, as well as establish a resource for sharing valuable lessons and experiences.



Source: elFrank70 – Flickr.

## KENYA SREP INVESTMENT FOCUS AREAS

### MENENGAI GEOTHERMAL PROJECT

**RATIONALE:** SREP financing will support geothermal resource development, capacity building and construction of power plants, transmission lines and substations to accelerate the shift to geothermal-based power as the main source of baseload generation capacity.

**FINANCING:** US\$40 million SREP financing is expected to leverage US\$478 million in additional co-financing from the government, AfDB, and others, for two distinct AfDB and IBRD-implemented projects associated with the Menengai geothermal project.

#### EXPECTED RESULTS:

- Provide financing for initial project activities of the 200 MW Menengai geothermal plant, including detailed surface exploration, infrastructural development, and drilling of exploratory and appraisal wells.
- Provide financing for the 20km 220kV Menengai-Rongai transmission line and associated substations to connect Menengai's geothermal generation capacity to the national grid.
- Reduce real and perceived resource risks to attract private sector participation in geothermal projects to achieve Kenya's 2030 target of 5,000 MW installed geothermal capacity.
- Improve the livelihoods of communities around geothermal sites by supplying water and process heat for farming, industrial use and social amenities.

### HYBRID MINI-GRID SYSTEMS

**RATIONALE:** SREP financing will support the scale-up and expansion of the government's existing program for piloting rural solar and wind hybrid mini-grid systems to improve access and affordability of electricity for rural households and institutions, and reduce dependence on biomass and kerosene.

**FINANCING:** US\$10 million SREP financing is expected to leverage US\$58 million in additional co-financing from the government, IBRD, private sector, and other development partners for this IBRD-implemented project.

#### EXPECTED RESULTS:

- Provide financing for the installation of 3 MW solar and wind energy in 12 isolated diesel generators with total installed capacity of 11 MW, as well as for the construction of 27 isolated mini-grids with total installed capacity of 13 MW.
- Integrate renewables to achieve a 30% renewable energy standard in planned and existing mini-grids, reducing and avoiding local pollutants and GHG emissions.
- Demonstrate the viability of systematically scaling-up isolated mini-grids to attract greater private sector participation transformative investments to replace unsustainable diesel-based mini-grid electricity model with a renewable, cost-effective approach to rural energy supply.
- Improve rural access to medical, educational, and water services as well as enhanced health and opportunities in rural areas, particularly for women and youth

