KENYA'S EXPERIENCE IN RENEWABLE ENERGY

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Background

- Population – 40M;
- Energy: Biomass -68% Fossil fuels & Electricity -31%
- Electricity – **1753 MW** (29% of the population);
- Energy Mix: **68%** renewable; 32% Fossil fuels
- Hydro(812MW- 49%), Geothermal(248MW – 19%), Wind(5.8MW), Solar(0.5MW), cogeneration(66MW) & Fossil fuels(661MW)
- Projected power demand- **15,000MW** by 2030

Policy & Legal Framework

1) Kenya Constitution, 2010

2) Kenya Vision 2030

3) Kenya's Energy policy Sessional Paper No.4 of 2004

4) Energy Act, 2006

5) Geothermal Resources Act

6) Feed-in-Tariffs policy to encourage investment in renewable energy technologies.

7) Regulations – Energy Mgt, solar water heating, efficient cookstoves, Solar PV

8) National Climate Change Response & Action Plan –Policy& Bill ongoing

Relevant institutions

- Ministry of Energy & Petroleum- Department of RE
- Energy Regulatory Commission
- Kenya Electricity Generating Company(KenGen)
- Geothermal Development Company(GDC)
- Kenya Electricity Transmission Company(Ketraco)
- Rural Electrification Authority
- Independent Power Producers(IPPs)
- National Electrification and Renewable Energy Authority (NERA) –to be established –draft Energy Policy

Potentials of Renewable Energy sources

Renewable source	Current	Potential
Hydro	812MW(14% developed)	6,000MW
Geothermal	248MW	**7,000-10,000MW**
Solar	0.5MW	4-6kWh/m^2
Wind	5.8MW	346W/m^2
Biogas, Municipal Waste		

Benefits of RE

- Available vast indigenous Renewable Energy(RE) resources
- RE sources have the potential to enhance energy security
- generate income
- create employment
- mitigate climate change
- generate foreign exchange savings.

Investments

- GoK investments
- Rural electrification programme –solar & wind
- The Scaling-up Renewable Energy Programmes (SREP) – GoK & Development partners(CIF) -60 minigrids
- Increased private sector investments in renewable energy
- Programmes supported jointly by GoK & development partners- increase RE in the energy access, EE & access
  - Investments in RE in off-grid public institutions
  - Construction of 3 wind plants –460MW
- CSO initiatives –improved cookstoves, portable solar lighting etc

Current Government target

- **5,000 MW** of new generation is to be developed by 2016/2017 to bring total installed capacity to at least 6,600MW.
- generation cost reduction: US¢ 11.30 to 7.41, end-user tariffs reduction from US¢ 14.14 to 9 for commercial/industrial customers and from US¢ 19.78 to 10.45 for domestic customers
- Financing and technology access will determine choices
- Other emerging choices – Oil & Coal discoveries

Barriers/Challenges RE

- High upfront cost of project development/investments
- High exploration and drilling cost & risk for geothermal
- Long lead time for geothermal power development (5-8years)
- High costs of technology transfer resulting slow domestication of technology manufacture and assembly –
- Inadequate skilled renewable energy technicians and engineers
- Policy risks(political)
- length of time for negotiations
- Poor access to RE sites

Conclusion

- RE based on firm policy, legal & institutional framework
- RE identified to have high mitigation potential & significant SD benefits particularly:
  a) Geothermal Development
  b) Distributed clean energy technologies
  c) Increased afforestation & reforestation
- There is increasing demand for energy in line with Vision 2030 – Choices
- There is need for enhanced financial, technological & capacity building support to increase RE uptake

THANK YOU

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