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

<table>
<thead>
<tr>
<th>Renewable source</th>
<th>Current</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydro</td>
<td>812MW (14% developed)</td>
<td>6,000MW</td>
</tr>
<tr>
<td>Geothermal</td>
<td>248MW</td>
<td>7,000-10,000MW</td>
</tr>
<tr>
<td>Solar</td>
<td>0.5MW</td>
<td>4-6kWh/m²</td>
</tr>
<tr>
<td>Wind</td>
<td>5.8MW</td>
<td>346W/m²</td>
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<tr>
<td>Biogas, Municipal Waste</td>
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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 – 460 MW
- 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 (5-8 years)
- 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

fmohamed@environment.goke