ROLE OF UTILITIES IN
SCALING – UP
DEPLOYMENT OF OFF-
GRID ELECTRIFICATION
SYSTEMS

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Summary

• Introduction
• Private Micro Grids
• Utility’s Micro Grids
• Renewable Energy in Off-grid Areas
• Village lighting using solar
• Conclusion
Introduction

• Micro grids are established where power line extensions are not economically viable
  ➢ Distance
  ➢ Demand
  ➢ Customers ability to pay?
Private Micro Grids

- Private home systems – mainly solar
- Private micro grids – mainly diesel and small hydro around Mt. Kenya

Major challenges in operation mainly due to cost - Current cost approx 40 US cents/kWh fuel only
Private Micro Grids (Cont.)

- Energy loses due to poor network
- Maintenance and expansion challenges due to lack of sufficient resources
- One major diesel micro grid that was initiated by an NGO requested Kenya Power to take over due to the above challenges
Utility’s Micro Grids
Utility’s Micro Grids (Cont.)

• Currently there are 18 operational micro grids operated by Kenya Power with a total installed capacity of 19MW

• 7 of these have operated for more than 30 years

• 11 have been developed in the last six years

• 11 more are currently being developed
Utility’s Micro Grids (Cont.)

- All have diesel generators
Utility’s Micro Grids (Cont.)
Renewable Energy in Off-grid Areas

- Two sites have wind generation and six have solar generation

### Off-grid Renewable Energy Generated in September 2012

- **Solar**: 1.3%
- **Wind**: 3.6%
- **Thermal**: 95.1%
Kenya Wind Map
Off-grid Renewable Energy Projects
Off-grid Renewable Energy Projects (Cont)
Off-grid Renewable Energy Projects (Cont)
Off-grid Renewable Energy Projects (Cont)
Off-grid Renewable Energy Projects (Cont)
Off-grid Renewable Energy Projects (Cont)
UNEP Solar Plant in Nairobi
Village Lighting Using Solar

Nasigel Solar Village Lighting
Village Lighting Using Solar (Cont.)

Nasigel Solar Village Lighting
Village Lighting Using Solar (Cont.)

Lagbogol Solar Village Lighting
Village Lighting Using Solar (Cont.)
Village Lighting Using Solar (Cont.)
Conclusion

- Plenty of sunshine all year
- Plenty of space for installation of solar panels
- Good wind speeds in off-grid areas
- Funding from the government
- Uniform energy tariff for the whole country
Q&A

THANK YOU